



**Empire State
Development**

**New York
Convention Center
Development
Corporation**



*REQUEST FOR QUALIFICATIONS
FOR
DESIGN-BUILD SERVICES*

**JACOB K. JAVITS CONVENTION CENTER
EXPANSION PROJECT**

APRIL 12, 2016

**NEW YORK CONVENTION CENTER
DEVELOPMENT CORPORATION**

**JACOB K. JAVITS CONVENTION CENTER
Expansion Project**

Request for Qualifications for Design-Build Services

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NEW YORK CONVENTION CENTER DEVELOPMENT CORPORATION

JACOB K. JAVITS CONVENTION CENTER

Expansion Project

Request for Qualifications for Design-Build Services

APRIL 12, 2016

1. INTRODUCTION

1.1 Project Overview

The New York Convention Center Development Corporation (Owner or CCDC) is soliciting Statements of Qualifications (SOQs) from interested and qualified firms to provide design and construction services required to design, construct and commission the expansion (the New Facilities) of the JACOB K. JAVITS CONVENTION CENTER (the Existing Facilities) in New York City. Under the design-build (DB) delivery method, a single entity, which may include one or more firms, will be procured and will be responsible to the Owner for the design and construction of the New Facilities. The New York Convention Center Operating Corporation (Operating Corporation or CCOC) is the operator of the Existing Facilities and will be the operator of the New Facilities. The New Facilities are expected to consist generally of an off-street truck marshalling facility, a ballroom, exposition space, meeting rooms, and new outdoor space.

This RFQ invites Respondents to submit SOQs describing in detail their technical and financial qualifications to perform the Contract Services. The issuance of this RFQ is the first step in a two-step procurement process being conducted pursuant to the New York Transformational Economic Development Infrastructure and Revitalization Projects Act, effective in April 2016 (Enabling Legislation). **ONLY THOSE FIRMS THAT RESPOND TO THIS RFQ AND ARE SHORT-LISTED BY THE SELECTION COMMITTEE IN ACCORDANCE WITH THE REQUIREMENTS OF THIS RFQ AND THE ENABLING LEGISLATION WILL BE ISSUED A REQUEST FOR PROPOSALS (RFP) AND INVITED TO SUBMIT A PROPOSAL IN RESPONSE TO THE RFP. UP TO THREE (3) FIRMS ARE EXPECTED TO BE SHORT-LISTED AS ELIGIBLE TO PARTICIPATE IN THE RFP STAGE OF THIS PROCUREMENT.**

By utilizing a DB project delivery approach, the Owner expects to secure substantial public benefits. These benefits include expedited project design and construction scheduling, optimal risk allocation, competitive design selection, clear assignment of performance responsibilities to a single contracting entity, and cost savings. Other expected benefits include the full integration of key design and construction, the professional coordination of construction activities with the Operating Corporation's event calendar and event operations, and the involvement of quality assurance personnel in all aspects of the Project development. The Owner's intent in developing this RFQ and the subsequent RFP is to encourage qualified firms to provide the best solution for the Project in accordance with the requirements of this RFQ and the subsequent RFP. The Owner expects to enter into an agreement (the Design-Build Contract) with a private entity (the Design-Builder) for the performance of the Contract Services. The technical requirements for the Project are being developed and will be presented in the RFP. The presentation of technical requirements in this RFQ is for general understanding only, and is not necessarily indicative of RFP requirements.

The Owner's procurement strategy includes the following steps:

- RFQ process resulting in Short-listed Respondents;
- RFP (including draft Design-Build Contract) issued to Short-listed Respondents;
- Addenda to the RFP issued to Short-listed Respondents;
- Commercially confidential meetings with Short-listed Respondents;
- Proposal Submittal;
- Proposal Evaluation; and
- Selection of Design-Builder.

1.2 Glossary

Words and terms that are used herein shall have the meanings as set forth in this glossary unless otherwise defined.

1.2.1 Abbreviations

The following abbreviations are used in this document:

DB	Design-Build
MWBE/SBE	Minority and Women-Owned Business Enterprises/Small Business Enterprises
RFP	Request for Proposals
RFQ	Request for Qualifications
SOQ	Statement of Qualifications

1.2.2 Definition of Terms

The following terms are used in this document:

Consultant Support Team	The entities who will support the Owner in connection with this procurement, as described in Section 3.1 of this RFQ.
Contract Services	All services, including the furnishing of all labor, materials, equipment, supervision and other incidentals required to obtain permits, design, construct and commission the New Facilities.
Contracts Officer	The individual designated in Section 3.3 who will serve as the Owner's point of contact for all communications concerning this RFQ.

Design-Build Contract	The contract awarded to the Selected Proposer for the Project.
Design-Build Price	The lump sum amount payable to the Design-Builder for the performance of the design-build work, including all permitting, design, construction and commissioning in accordance with the Design-Build Contract.
Design-Builder	The Selected Proposer with whom the Owner enters into the Design-Build Contract to perform the Contract Services. The term "Design-Builder" is used to refer to the Selected Proposer after approval and execution of the Design-Build Contract.
Enabling Legislation	New York Transformational Economic Development Infrastructure and Revitalization Projects Act (effective in April 2016).
ESD	Empire State Development, the "doing business as" name for the New York State Urban Development Corporation.
Existing Facilities	The current JACOB K. JAVITS CONVENTION CENTER, excluding the proposed New Facilities.
General Project Plan	The General Project Plan for the JACOB K. JAVITS CONVENTION CENTER RENOVATION AND EXPANSION CIVIC PROJECT, dated March 19, 2009.
Guaranty Agreement	The contract between the Owner and the Project Guarantor in which the Project Guarantor irrevocably and unconditionally guarantees to the Owner the Design-Builder's payment and performance obligations under the Design-Build Contract. A form of the Guaranty Agreement will be included in the RFP.
JACOB K. JAVITS CONVENTION CENTER	The JACOB K. JAVITS CONVENTION CENTER of New York, consisting of the Existing Facilities and the proposed New Facilities.
New Facilities	New truck marshalling facility, new ballroom, new exposition space, new meeting space, new outdoor space, and all equipment and structures required in connection therewith (which will be more particularly described in the RFP), all constituting a portion of the JACOB K. JAVITS CONVENTION CENTER EXPANSION AND RENOVATION CIVIC PROJECT AND LAND USE IMPROVEMENT PROJECT.
Operating Corporation	New York Convention Center Operating Corporation.
Owner	New York Convention Center Development

Corporation.

Procurement Website

The Procurement Website is the website located at the website address set forth in Section 3.3.

Project or the JACOB K. JAVITS CONVENTION CENTER Expansion Project

The New Facilities and the Contract Services.

Project Guarantor

The entity that will irrevocably and unconditionally guarantee to the Owner the Design-Builder's payment and performance obligations under the Design-Build Contract. As provided in Section 2.9, the Project Guarantor may be either the Design-Builder or the entity that will execute the Guaranty Agreement.

Proposal

The documents submitted by a Proposer in response to the RFP.

Proposers

Short-listed Respondents who submit a Proposal in response to the RFP.

Reference Projects

A minimum of 5 and no more than 10 Similar Projects identified by the respondent as Reference Projects for purposes of this RFQ.

Respondent

The individual firms, partnerships, corporations, joint ventures or combination thereof submitting an SOQ in response to this RFQ.

RFP Evaluation Criteria

The criteria and standards which constitute the basis for evaluating Proposals. RFP Evaluation Criteria will be defined in the RFP.

RFQ Evaluation Criteria

The criteria and standards set forth in Section 6 of this RFQ, which constitute the basis for the Selection Committee's evaluation of the SOQs and determination of the Short-listed Respondents.

Selected Proposer

The Proposer determined to be the most qualified based on the RFP Evaluation Criteria and which is recommended to the Owner by the Selection Committee for approval and execution of the Design-Build Contract.

Selection Committee

The committee established by the Owner and responsible for evaluating the SOQs, short-listing Respondents and subsequently evaluating Proposals and determining the Selected Proposer.

Short-listed Respondents

Those Respondents deemed to be the most qualified to provide the Contract Services by the Selection Committee based on the RFQ Evaluation Criteria.

Significant Subcontractor

The following members of the Respondent's proposed team: the lead design professional engineering firm, and the firm primarily responsible for the construction of the New Facilities.

Similar Projects

Large convention centers, large ballrooms, large meeting spaces, or other similar civic facilities and projects involving large truck marshalling or parking facilities.

Substantial Completion and Occupancy Readiness

Completion of construction and commissioning so that the New Facilities are ready for occupancy.

2. PROJECT SPECIFIC INFORMATION**2.1 The Owner, ESD, and the Operating Corporation**

The Owner, CCDC, is a subsidiary of the New York State Urban Development Corporation (UDC) d/b/a Empire State Development (ESD), a New York State public benefit corporation, and is authorized pursuant to 2004 Sess. Law News of N.Y. Ch. 3 (S. 7803) to develop and construct the JACOB K. JAVITS CONVENTION CENTER and lead its expansion and renovation. The Operating Corporation, CCOC, is a separate and independent New York State public benefit corporation authorized to operate and maintain the Existing Facilities, and to approve plans for its expansion and renovation. The Owner owns the Existing Facilities and the Project site that is the subject of this RFQ, and leases it to the Operating Corporation. The Owner and the Operating Corporation have separately appointed Boards of Directors.

2.2 General Description of the Project

The Existing Facilities opened in 1986 and constitute the busiest convention center in the United States, encompassing 2.1 million square feet and 840,000 square feet of exhibition space. In 2015, the Existing Facilities were operational for 337 days of the calendar year. Since its opening, the Existing Facilities have been New York City's primary venue for large conventions, exhibitions, and major trade shows. These events are key contributors to the New York City and State economy, stimulating direct and indirect employment, economic activity, and tax revenues, and strongly supporting New York City's hotel, restaurant, tourism, and entertainment industries. The Manhattan neighborhood around the Existing Facilities has expanded in recent years, including the Hudson Yards redevelopment project, and continues to grow. Consistent with a 2009 General Project Plan for the JACOB K. JAVITS CONVENTION CENTER, a major renovation of the Existing Facilities was completed in 2014 that included a new façade, new entrances, a new green roof, a 26% reduction in energy use, a vastly improved visitor experience, and state-of-the-art operations upgrades. The 2014 renovation greatly enhanced the public perception of the Existing Facilities, but current operations and the Existing Facilities' ability to compete with the convention center market are challenged by the new neighborhood development and the unavailability of parking for trucks serving the Existing Facilities. Expansion of the Existing Facilities is necessary to enable the Existing Facilities to meet industry standards that will enable it to accommodate larger events and the truck traffic generated by events, and bring new businesses and opportunities to New York, without conflicting with commercial and residential development.

On April 1, 2016, the Legislature passed the Enabling Legislation authorizing the Owner to use the design-build method of contracting for construction projects related to the Existing

Facilities. In accordance with this legislation, the Owner is issuing this RFQ for design and construction of the New Facilities.

The Project involves the expansion of the Existing Facilities into one of the ten largest convention centers in the United States. The New Facilities will include:

- A 480,000 square feet four level on-site marshalling facility, including 27 new loading docks;
- 92,000 square feet of new prime exhibit space;
- 107,000 square feet of new state-of-the-art meeting room and ballroom space;
- 113,000 square feet of pre-function space;
- Roof terrace accommodating 1,500 people for outdoor events;
- Expanded green-roof area; and
- Minimum LEED Silver certification.

The New Facilities will be contiguous with the Existing Facilities at the exposition and concourse levels and are designed to operate autonomously for certain functions.

2.3 Enabling Legislation

The Enabling Legislation authorizes the UDC, CCDC, and their subsidiaries to use the design-build method of contracting for certain specified projects, including construction projects related to the JACOB K. JAVITS CONVENTION CENTER. The Enabling Legislation requires a two-step competitive procurement process and sets forth certain specific requirements to be included in the request for qualifications, the request for proposals, and the resulting design-build contract, as well as identifying certain sections of New York State law that must be complied with in connection with the procurement.

2.4 Project Budget and Funding

The Owner expects to establish an affordability ceiling in the RFP for the Design-Build Price. Funding for the payment of the Design-Build Price will be provided through a State appropriation of \$1 billion, bond issuance proceeds, cash on hand, and other sources as required.

2.5 Stipend for Unsuccessful Proposers

The Owner intends to offer a stipend to Respondents who are selected to respond to the RFQ and who submit for consideration by the Owner a compliant Proposal that is not selected by the Owner for the Project, as compensation for the design services provided to the Owner. The stipend is anticipated to be in the amount of \$1.5 million to each unsuccessful Proposer.

2.6 Project Site

The Existing Facilities are located on the blocks bounded by Eleventh Avenue and Twelfth Avenue between 34th Street and 40th Street in New York City. The New Facilities will be located on the blocks bounded by Eleventh Avenue and Twelfth Avenue between 38th Street and 40th Street in New York City. A portion of the Existing Facilities, a temporary facility referred to as Javits North between 39th Street and 40th Street, is to be demolished. There are

three tubes for the Lincoln Tunnel that run under the Project site. Two tunnel tubes are cored through rock and are located well below grade between 38th and 39th Street. The third tunnel tube is the cut-and-cover type and runs under 39th Street sloping from just below grade at 11th Avenue to a lower elevation at 12th Avenue.

2.7 Related Project

Respondents are advised that a separate project will be on-going at the Project site during the Project implementation. This work will be separate from and not included in the Design-Builder's scope of work under the Design-Build Contract. However, the Design-Builder will be responsible for coordinating its design-build work with the work of the other projects. The proposed transformer building project includes the relocation of the existing transformers into a new transformer building immediately adjacent to, and to be integrated with, the Existing Facilities. As part of this project, several utility lines generally running along 39th Street will need to be relocated and coordinated with the relevant jurisdictional authority. These consist of a sewer main (DEP), a water main (DEP), telecommunication lines (ECS), electrical feeders (Port Authority of NY & NJ), and Con Edison service to the Existing Facilities.

2.8 Performance and Payment Bonds

The Design-Builder will be required to deliver to the Owner performance and payment bonds in forms and amounts acceptable to the Owner. The Owner reserves the right to negotiate the bonding level requirements and may consider other guarantees (bank letters of credit, etc.) in lieu of or in combination with the performance and payment bond requirements. Surety companies issuing such bonds must meet the applicable requirements indicated in Section 5.2.6.1 of this RFQ under "Bonding Capacity." Additional details will be provided during the RFP process.

2.9 Financial Strength and Security for Performance

As a general matter, in order to be short-listed pursuant to this RFQ, Respondents must demonstrate sufficient financial strength to assure the Owner that they are capable of performing the Contract Services; i.e., a financial capability at least commensurate with the Project. To this end, Respondents may propose to supplement the financial strength of the entity proposed to serve as the Design-Builder under the Design-Build Contract with the Owner by proposing a parent or affiliate company to serve as the Project Guarantor and guarantee all of the obligations of the Design-Builder under the Design-Build Contract through a Guaranty Agreement. A Respondent will not be short-listed pursuant to this RFQ based on financial strength of an entity that will not have a contractual relationship with the Owner (either through the Design-Build Contract or through a Guaranty Agreement). Accordingly, the Project Guarantor will be required to execute a Guaranty Agreement if a Respondent chooses to submit financial information for pre-qualification from an entity other than the entity proposed to serve as the Design-Builder under the Design-Build Contract with the Owner. Further requirements associated with the Project Guarantor are set forth in Section 5.2.6.2 of this RFQ.

2.10 Environmental Review

The planned improvements to the Existing Facilities have been the subject of environmental review under the State Environmental Quality Review Act (SEQRA). Any remaining action required to be taken with respect to the Project will be completed prior to the execution of the Design-Build Contract.

2.11 Scope of Services

The Design-Builder's scope of work for the Project will be set forth in detail under the Design-Build Contract between the Owner and the Design-Builder. The RFP will contain a draft of the Design-Build Contract and will address how the shortlisted Respondents may provide comments on such draft. The Design-Builder shall provide the Owner with the following integrated design-build services:

- 2.11.1 Pre-Development: confirmation of intent to conform to the design provided in the bridging documents or alternative design proposals for the New Facilities; permitting.
- 2.11.2 Design: completion of design development and the preparation of construction documents for the New Facilities; preparation of schematic design and design development documents for alternative design proposals; support to the Owner design review process.
- 2.11.3 Construction: construction of the New Facilities; compliance with all Owner and industry construction standards; oversight and management of all environmental compliance and permitting requirements; completion of all required commissioning and operational readiness testing.

Following Substantial Completion and Occupancy Readiness, the Operating Corporation will assume responsibilities for managing the New Facilities.

2.12 Project Concept Report

The Project Concept Report is set forth in Attachment C. The Owner makes no representation as to the accuracy or completeness of any of the information set forth in this Project Concept Report. Respondents should recognize that the Owner, through the DB solicitation process, seeks input on the development of the Project. To the extent that the Project Concept Report includes design solutions or related information, such information does not necessarily represent the optimal or specific Project features that will be included in the RFP and cannot be relied upon for compliance with the requirements of the RFP.

2.13 Project Labor Agreement

Respondents are advised that a Project labor agreement will be required for the Project. As a condition of award of the Design-Build Contract, the Design-Builder must agree to enter into a Project labor agreement.

3. CONSULTANT SUPPORT TEAM AND SELECTION COMMITTEE

3.1 Owner's Consultant Support Team

The following entities have been retained to serve as the primary Consultant Support Team for the Project:

- J2A, a joint venture of FXFOWLE Architects and A. Epstein & Son International (design architects, preparing the bridging documents)
- AECOM and its affiliates (pre-construction services)
- Hawkins Delafield & Wood LLP (legal advisors)

- Lehrer, LLC (Owner’s advisor)
- William Caruso & Associates, Inc. (food service consultants)
- Leslie E. Robertson & Associates (structural engineer)
- WSP Parsons Brinkerhoff (MEP engineers)
- Langan (civil engineers)
- Cerami Associates (acoustics/AV)
- Thornton Tomasetti (façade)
- Jensen Hughes (code & ADA)
- Sam Schwartz Engineering DPC (traffic)
- SBLD Studio (lighting)
- Starr Whitehouse (landscape)
- Van Deusen & Associates (vertical transportation)

Additional members may be added to the Consultant Support Team for the Project. The Owner may identify any new members in an addendum to this RFQ if and when a member is added.

The Consultant Support Team's scope of services requires team members to provide assistance to the Owner and its Selection Committee in preparing the RFQ and RFP, and in evaluating SOQs and Proposals, including providing financial, contractual and technical advice. The Consultant Support Team may also provide DB project oversight, including design reviews, construction monitoring and environmental compliance oversight.

Members of the Consultant Support Team are not eligible to assist or participate as Project team members with any Respondent.

3.2 Selection Committee

The Owner will establish a Selection Committee, which will be responsible for evaluating the SOQs, short-listing Respondents and subsequently evaluating Proposals and making a recommendation as to the Selected Proposer. Proposals may be reviewed by ESD, the Owner, the Operating Corporation, other State officials, and members of the Owner’s Consultant Support Team. Execution of an agreement to perform the Contract Services described in this RFQ is subject to certain approvals, as required under applicable law and regulation, which may include approval of ESD’s Board of Directors, the Owner’s Board of Directors, the Operating Corporation’s Board of Directors, the Public Authorities Control Board, the Comptroller of the State of New York, and the New York State Attorney General, and compliance with all applicable laws and regulations including the New York State Environmental Quality Review Act (“SEQRA”), and any other applicable laws.

3.3 Communications Protocol

Written questions related to the RFQ are encouraged. The Owner requires that all questions, requests for information and clarifications from interested parties, Respondents and Proposers

and any of their representatives be made in writing via email directly to the following address: JavitsExpansion@esd.ny.gov, attention to the Contracts Officer, Sarah Saint-Amand. Written questions must include the requestor's name, e-mail address and the Respondent represented and should be received prior to the close of business on April 19th, 2016. Responses to all timely and appropriate questions will be posted on ESD's website prior to the close of business on May 2nd, 2016 at: <http://www.esd.ny.gov/CorporateInformation/RFQs.html>. Only the Owner's written responses to RFQ questions that are issued in addenda to the RFQ can be relied upon by the Respondents.

In order to ensure equal access to information and foster a professional competitive environment for the Project, the Owner will develop and issue solicitation documents and other materials through the internet to the greatest possible extent. This Request for Qualifications, all addenda, and any other relevant information will be posted to the Procurement Website and be available for access and download to all interested parties. The Procurement Website is available at: <http://esd.ny.gov/corporateinformation/rfps.html>.

Respondents must check the Procurement Website periodically for addenda. It is the responsibility of each Respondent to ensure that they have obtained and incorporated all addenda into their SOQ. The Owner assumes no responsibility or liability whatsoever for the distribution of addenda to Respondents.

After publication of the RFQ, no interested party, Respondent or Proposer, including any of their representatives, may contact any Owner official (elected, executive, managerial or otherwise), employee, or representative, ESD Board members or staff, the Operating Corporation, or the Owner's Consultant Support Team during the Project procurement period, other than emails to JavitsExpansion@esd.ny.gov, attention to the Contracts Officer, Sarah Saint-Amand. Any such contact by a Respondent or potential respondent will be grounds for disqualification.

4. PROCUREMENT PROCESS

4.1 Procurement Objectives

In developing the Project using the DB process, the Owner hopes to benefit from the knowledge and experience of Respondents in minimizing cost and maximizing performance.

The Owner's Project objectives are to assure:

- 4.1.1 Conformance to regulations (federal, State and local),
- 4.1.2 Safety of the public, the Existing Facilities, the New Facilities, and employees and visitors,
- 4.1.3 Optimization of Project schedule,
- 4.1.4 Minimization of design, construction, and oversight costs,
- 4.1.5 A high quality design,
- 4.1.6 A high degree of design-build coordination,
- 4.1.7 Appropriate quality and durability of construction for long-term performance, functionality, and reliability,

- 4.1.8 Integrated operation and technology with the Existing Facilities,
- 4.1.9 The lowest possible operational, maintenance, repair and replacement costs consistent with meeting all other Project objectives,
- 4.1.10 Prudent management and protection of public resources, including utilities, streets and tunnels,
- 4.1.11 Continued operation and maintenance of the Existing Facilities with minimal disruption during construction and commissioning of the New Facilities,
- 4.1.12 Being a good neighbor to adjacent properties in terms of noise, dust, odors, traffic and light, and
- 4.1.13 Coordinated design development, with the Design-Builder eliciting Owner input in a manner that preserves Design-Builder's sole responsibility for the achievement of Project performance objectives while meeting Owner's objectives associated with cost, quality, aesthetics, and long-term operability.

4.2 Site Tour and Pre-SOQ Submittal Information Meeting

The Owner will conduct a site tour and Pre-SOQ Submittal Information Meeting on April 20th, 2016 at 1:00 pm at 655 West 34th Street (Administrative Entrance). Attendance at the site tour/Pre-SOQ Submittal Information Meeting is not mandatory. Respondents must RSVP via email to JavitsExpansion@esd.ny.gov by April 19th if they wish to participate; e-mails must include the names and associations of all tour attendees.

Minutes of the site tour or Pre-SOQ Submittal Information Meeting will not be prepared or circulated. Any responses to questions and materials distributed at the site tour or Pre-SOQ Submittal Information Meeting may be issued via addendum to the RFQ.

4.3 RFQ and Qualifications Submittal

This RFQ is the first step in the procurement process for the selection of a firm to perform the Contract Services. In order to be eligible to submit a Proposal in response to the forthcoming RFP, a response must be received to this RFQ and the Respondent must be short-listed by the Owner's Selection Committee and an RFP issued to the Short-listed Respondent. Only those Respondents that have been short-listed by the Selection Committee will be eligible to submit Proposals in response to the RFP. Submission of a SOQ responsive to the RFQ will require, among other things that the Respondent affirmatively declare its intention to participate in the RFP and Proposal process as outlined in Section 4.5. In addition, SOQs are required to comply with Section 5 of this RFQ.

4.4 SOQ Evaluation

Using the criteria established in Section 6, the Selection Committee will evaluate the general, technical and financial qualifications of Respondents based on SOQs received in accordance with Section 5, as well as clarifications submitted by Respondents in response to Owner requests, personnel references, and analysis of other publicly-available information. During the evaluation of SOQs, the Owner shall have the right to seek clarification from Respondents. The SOQ evaluation process is further described in Section 6.

4.5 RFP and Proposal Process

During the second phase of the procurement, an RFP will be issued to each Short-listed Respondent. The RFP will specify the requirements for submission of a technical proposal and a price proposal from each Short-listed Respondent. Prior to the submittal date for Proposals, a pre-Proposal submission conference may be held. Details related to this conference and the Proposal evaluation process will be included in the RFP.

4.6 Bridging Documents

Certain work has been done on the design of the Project by the Owner's Consultant Team. These design documents (bridging documents) are expected to be made available to the Short-listed Respondents in connection with the issuance of the RFP. The RFP will contain specific instructions as to the permitted or required use of these design documents, together with other instructions as to the nature of the technical proposals that are required to be submitted, including required technical specifications and performance standards. The RFP is expected to provide an opportunity to the Short-listed Respondents to make and propose design innovations.

4.7 Proposal Evaluation

Proposals received in response to the RFP will be evaluated using the RFP Evaluation Criteria and selection methodology that will be included in the RFP. The RFP Evaluation Criteria and selection methodology are expected to include and assess, at a minimum, the following factors:

- Demonstrated compliance with the design requirements;
- Proposer qualifications;
- Proposer financial capacity;
- Compliance with the Owner's Project schedule;
- Proposer quality management plan;
- Demonstrated ability to coordinate major construction projects with the continuing operational needs of existing adjacent facilities;
- Demonstrated ability to integrate major construction projects with existing facilities;
- Overall technical merit;
- Project schedule;
- Design-Build Price; and
- Other evaluation factors as may be determined by the Owner and specified in the RFP.

With respect to the assessment of the Proposer's financial capacity during the proposal evaluation phase of the procurement, this assessment will focus on whether the Proposer has experienced a material decline in financial strength during the period after short-listing of Respondents and the submittal of Proposals. The Selected Proposer will be the Proposer whose

Proposal is determined to be the most qualified based on the RFP Evaluation Criteria and the assessment method described in the RFP.

4.8 Procurement Schedule

A summary of the anticipated schedule of the major activities associated with this DB solicitation process is presented below.

Date	Activity
April 12, 2016	Issue RFQ
April 20, 2016	Site Tour and Pre-SOQ Submittal Information Meeting
April 25, 2016	Deadline for Submittal of Comments or Questions on RFQ
May 2, 2016	Posting of Responses to Comments and Questions on RFQ
May 10, 2016	Responses to RFQ Due
May 20, 2016	Redacted Response to RFQ Due
May 24, 2016	Selection of Short-listed Respondents to the RFQ
June 2016	Issue RFP with Design-Build Contract
September/October 2016	Responses to RFP Due
November/December 2016	Selection of Preferred Proposer
Early 1Q 2017	Notice to Proceed

Any and all of the above activities and dates are subject to modification by the Owner in its sole discretion.

4.9 Expenses of the Respondents

The Owner accepts no liability for the costs and expenses incurred by the Respondents in responding to this RFQ, responses to clarification requests and discussion meetings, and resubmittals, and any other activities included as part of this procurement process. Each Respondent that enters into the procurement process shall prepare the required materials and submittals at its own expense and with the express understanding that they cannot make any claims whatsoever for reimbursement from the Owner or from any of its employees, advisors or representatives (including any member of the Consultant Support Team) for the costs and expenses associated with the process, including, but not limited to, costs of preparation of the SOQ, loss of anticipated profits, loss of opportunity or for any other loss, cost or expense. The Owner shall, however, pay the unsuccessful Proposer a stipend for compliant Proposals in the amount of \$1.5 million.

4.10 Information Disclosure to Third Parties

All information submitted in response to this RFQ is subject to the Freedom of Information Law (FOIL), which generally mandates the disclosure of documents in the possession of ESD or CCDC upon the request of any person, unless the content of the document falls under a specific exemption to disclosure. If any Respondent wishes to claim that any information submitted in its response to this RFQ constitutes a Trade Secret or is otherwise exempt from disclosure under FOIL, such claim must be made at the time of the response, and must be in writing supported by relevant and material arguments. Respondents must submit to the Owner on or before May 20, 2016 at 4:00 p.m. ET one (1) electronic copy (in the form of a flash drive) of the Respondent's SOQ in which the Respondent has redacted each item of information that the Respondent believes to be a trade secret or information that if disclosed would cause substantial injury to the competitive position of the Respondent. The Respondent must provide a brief justification for each redaction. The redacted SOQ must be addressed and submitted to:

Empire State Development
633 Third Avenue, 35th Floor
New York, New York 10017
Attn: Sarah Saint-Amand
Re: Javits Expansion RFQ

Notwithstanding the foregoing and the Respondent's submission of the redacted copy of the Respondent's SOQ, the Owner may determine, in the Owner's sole discretion, whether to disclose or to deny access to any information received from Respondent, including such redacted information.

4.11 Rights of the Owner

The issuance of this RFQ constitutes only an invitation to present qualifications. This RFQ is not a tender or an offer nor a request for proposals, and there is no intention by the Owner to make an offer by issuing this RFQ. The rights reserved by the Owner, which shall be exercised in its sole and absolute discretion, include without limitation the right to:

1. Require one or more Respondents to clarify the SOQs submitted.
2. Conduct investigations with respect to the qualifications and experience of each Respondent.
3. Visit and examine the Reference Projects, and any of the other projects referenced in the SOQs, and to observe and inspect the operations at such projects.
4. Waive any defect or technicality in any SOQ received.
5. Determine which Respondents are qualified to be short-listed to receive the RFP and submit Proposals in response to the RFP.
6. Eliminate any Respondent which submits an incomplete or inadequate response or is not responsive to the requirements of this RFQ.
7. Supplement, amend, or otherwise modify this RFQ, prior to the date of submission of the SOQs.

8. Issue one or more amendments to this RFQ extending the due date for the SOQs.
9. Receive questions concerning this RFQ from Respondents and to provide such questions, and the Owner's responses, to all Respondents.
10. Cancel this RFQ in whole or in part with or without substitution of another RFQ if determined to be in the best interest of the Owner.
11. Take any action affecting the RFQ process, the RFP process, the Contract Services or the Project that would be in the best interests of the Owner.

The foregoing reserved rights are in addition to and shall not serve to limit any of the specific rights and conditions set forth in this RFQ.

5. SUBMITTAL OF QUALIFICATIONS

5.1 General Instructions

Twenty (20) bound (spiral or similar) hard copies of the SOQs and one (1) electronic copy (in the form of a flash drive) of the SOQs must be submitted to the Owner on or before May 10, 2016 at 4:00 p.m. ET. SOQs received after this deadline will not be considered and will be returned unopened. Sealed SOQs must be addressed and submitted to:

Empire State Development
633 Third Avenue, 35th Floor
New York, New York 10017
Attn: Edgar Camacho, ESD Procurement Unit
Re: Javits Expansion RFQ

SOQs will not be opened publicly.

Firms that intend to submit SOQs should notify the Owner as soon as possible of their intent by email to the Contracts Officer in accordance with Section 3.3. At a minimum, the following information must be provided in connection with such notification: (i) contact name and title, (ii) Respondent name and location, including mailing address, and (iii) contact phone number, fax number and email address. The Owner cannot assure that Respondents who have not submitted notification will receive communications from the Owner regarding the procurement process or, upon notification, that they will receive any communications from the Owner that were transmitted prior to notification. The Owner will make an effort to notify potential Respondents by email of the posting of addenda; however, it cannot guarantee that every potential Respondent will be notified each time. Therefore, it is the responsibility of all Respondents to check the Procurement Website periodically for addenda and to obtain this information in a timely manner. Failure to include acknowledgment of all addenda may be cause for rejection of the SOQ.

No interpretation or clarification of the meaning of any part of this RFQ made orally by the Contracts Officer or any Owner representative, including any member of the Consultant Support Team, to any potential Respondent will be binding on the Owner. Requests for interpretation or clarification by any Respondent must be made in writing to the Contracts Officer as indicated in Section 3.3. Interpretations and clarifications will be made in the form of written addenda to this RFQ.

Receipt of all addenda shall be acknowledged by Respondents. A form for acknowledging addenda will be provided as part of the first addendum, if any, to this RFQ. Each Respondent shall be responsible for obtaining all addenda prior to submitting an SOQ. Submittal of an SOQ shall constitute certification that the Respondent has received and reviewed all addenda.

5.2 Information Requirements of Qualifications Submittal

The Statement of Qualifications is to be structured as follows:

Section 1 — General Information: Include the Transmittal Letter, including Attachments A-1, A-2, A-3 and A-4 (Section 5.2.1), Project Team information (Section 5.2.2), Project Understanding and Approach (Section 5.2.3), and Comments on Project Concepts, if any (Section 5.3).

Section 2 — Technical Qualifications: Include all information relating to design experience (Section 5.2.4.1) and construction experience (Section 5.2.4.2), as well as all information concerning the Reference Projects, including Forms B-1 and B-2 (Section 5.2.5), and a completed Diversity Practices Questionnaire (set forth in Attachment D).

Section 3 - Financial Qualifications: Include all financial information required pursuant to this RFQ, including Forms B-3 and B-4 (Section 5.2.6).

Section 4 — Procurement Forms and Requirements: Include all procurement forms required in Section 7 in the order requested therein.

The format of the SOQ must be as indicated above. Narrative pages are to be 8-1/2 inches by 11 inches, SINGLE SIDED ONLY, and shall be bound into the applicable section. A logical, clear and concise presentation of information is encouraged. Narrative text and related tables and figures in Sections 1 and 2 shall not exceed a combined total of 100 pages (50 pages for each Section), not including the following:

- Attachment A Transmittal Letter
- Attachments A-1 through A-4 (provide under a separate tab in Volume 1 of your SOQ)
- SOQ Submittal Form B-1 Key Project Staff (provide under a separate tab of your SOQ along with full resumes as required in Section 5.2.2)
- SOQ Submittal Form B-2 Relevant Project Experience (provide under a separate tab of your SOQ)
- SOQ Submittal Form B-3 Financial Resources Data (provide under a separate tab of your SOQ)
- SOQ Submittal Form B-4 Bank Credit Reference (provide under a separate tab of your SOQ)

No page limitation shall apply to Section 3, Section 4, or to the forms or resumes of key staff required in Sections 1 and 2. Minimum font size is 10. Audio visual materials including audio tapes, video tapes and CD ROM presentations will not be accepted.

Respondents are instructed to limit the information included in the SOQ to the information necessary to demonstrate its technical and financial qualifications for the Project, and any other information specifically requested in this RFQ. The Owner is not interested in receiving marketing brochures or generic narratives in SOQs. Experience and financial strength will

constitute Proposal evaluation factors and Respondents will be required to submit detailed experience and updated financial information in their Proposals.

5.2.1 **Transmittal Letter**

Each SOQ must include one fully executed SOQ and notarized Transmittal Letter (Attachment A) from the Respondent acknowledging, among other things, that the Respondent has completely reviewed and understands and agrees to be bound by the requirements of this RFQ. The SOQ Transmittal Letter commits the Respondent, if short-listed, to submit a Proposal and shall further state that (a) all information and statements contained in the SOQ are current, correct and complete; (b) the SOQ is provided fairly, without collusion or fraud; and (c) the Respondent intends to comply with the Owner's Non-Discrimination and Contractor and Supplier Diversity Requirements set forth in Section 7.4. Finally, the SOQ Transmittal Letter must contain a listing of all firms which are part of the Project team and designate a contact person for all communications to and from the Owner with respect to this procurement. The SOQ Transmittal Letter must also identify the Respondent's Project Guarantor, if applicable.

The SOQ Transmittal Letter must be signed by a representative of the Respondent who is empowered to sign such material and to commit the Respondent to the obligations contained in the SOQ (the Designated Signatory). The Certificate of Authorization (Attachment A-1 to the SOQ Transmittal Letter) attesting to such authorization must also be submitted with the SOQ Transmittal Letter. If the Respondent is a partnership, one or more of the general partners shall sign the SOQ. If the Respondent is a corporation, an authorized officer shall sign his or her name and indicate his or her title beneath the full corporate name. If the Respondent is a joint venture, each firm in the joint venture shall sign the SOQ Transmittal Letter. Anyone signing the SOQ as agent must file with it legal evidence of his or her authority to execute such SOQ. The Designated Signatory shall sign all forms that require the signature of the Respondent.

If a Project Guarantor is being proposed, the SOQ Transmittal Letter must also include as Attachment A-2 to the SOQ Transmittal Letter the Project Guarantor Acknowledgement (Acknowledgement) signed by a representative of the Project Guarantor who is empowered to sign such material and to commit the Project Guarantor to the obligations contained in the Acknowledgement. A Project Guarantor Certificate of Authorization (Attachment A-3 to the SOQ Transmittal Letter) attesting to such authorization must also be submitted with the SOQ Transmittal Letter. If the Project Guarantor is a partnership, one or more of the general partners shall sign the Acknowledgement. If the Project Guarantor is a corporation, an authorized officer shall sign his or her name and indicate his or her title beneath the full corporate name. If the Project Guarantor is a joint venture, each firm in the joint venture shall sign a separate Acknowledgement. If there are multiple Guarantors (which must be jointly and severally liable), each must independently comply with these requirements and submit separate Guarantor Acknowledgments with Certificates of Authorization. Anyone signing the Acknowledgement as agent must file with it legal evidence of his or her authority to execute such Acknowledgement.

Those members of the Respondent's team responsible for leading the design and construction services for the Project must be appropriately registered and licensed pursuant to the laws of the State of New York. As evidence of its compliance with the foregoing statutory requirements, each Respondent shall provide as Attachment A-4 to its SOQ transmittal letter a copy of the appropriate licenses and certificates of registration.

5.2.2 Project Team

The SOQ shall include a description of the Respondent, i.e., the form of business structure (corporation, partnership, joint venture, etc.) that is responding and will serve as the contracting party. A project organization chart is required. If the Respondent is a partnership or joint venture, all members of the Respondent shall be listed. The SOQ shall identify the portions of the work that will be undertaken directly by the Respondent and what portions of the work will be subcontracted and to which firms (i.e., Significant Subcontractors). At a minimum, the SOQ shall identify the parties that will undertake the roles for obtaining permits, design, construction and commissioning the New Facilities.

The proposed contractual relationships between the Respondent and its members and Significant Subcontractors shall be outlined in the SOQ. The Respondent shall describe the history of the relationships among the team members and Significant Subcontractors, including a description of past working relationships and a clear, definitive statement of the number of years the Respondent and each of its Significant Subcontractors and any other key team members have been in the business of providing (a) design services and (b) construction services.

The history, ownership, organization, and background of the Respondent shall be provided. If the Respondent is a partnership or a joint venture, the required information shall be submitted for each member of the joint-venture firm. The following information shall be provided for the Respondent, joint venture partners, and Significant Subcontractors:

- Name and business address of each partner (including limited partners), officer, and stockholder (where applicable) who own five percent or more of the shares.
- If the Respondent or joint venture is a subsidiary of a parent company, state when the subsidiary was formed and its place in the corporate structure of the parent company. If a subsidiary is newly created for the purposes of responding to the RFQ, the reasons for this action must be fully disclosed.

The Respondent shall provide the relevant qualifications of all key staff assigned to the Project including licensure and certification. This submission shall include the key project staff of the Respondent, its Project Guarantor, partner firms, and its Significant Subcontractors. Information shall include length of time practicing in profession, licenses and certifications, familiarity with the permitting, design, construction and commissioning of Similar Projects. Respondents shall also indicate which team members will be involved in commissioning and achieving Occupancy Readiness. Full resumes of key personnel (including the following types of roles: Program Manager, Design Manager, Construction Manager, Engineer in Responsible Charge for each major design segment, Construction QA/QC Manager, Operating Liaison (between Operating Corporation and Design-Builder), Public Information Consultant, Project Architect, and Landscape Architect) shall be provided, and shall include but not be limited to the information requested on Form B-1 of Attachment B for each such person. For each of the key personnel identified indicate on which of the Reference Projects identified in Section 5.2.5 that person played a key role and identify the role.

Respondents must recognize that its key assigned employees, along with its Significant Subcontractors and their key employees included in the SOQ, will be a factor in determining Short-listed Respondents for eligibility to receive the RFP. Therefore, changes to the Respondent's proposed team, including Significant Subcontractors and key employees, will not be allowed in the Proposal stage except for extenuating circumstances, such as corporate takeovers, buyouts, and other unforeseen changes, or to enhance Proposal teams. Proposers may strengthen their teams prior to submission of Proposals by adding additional personnel

and subcontractor members. The Selection Committee shall have the right to determine, in its sole discretion, the acceptability of any changes in the Proposer's proposed team as prescribed in its SOQ. Any changes to the Proposer's proposed team found to be unacceptable by the Selection Committee may result in disqualification of the Proposer.

The Respondent shall provide a general description of its collective experience in DB and DB-based project delivery methods, and other alternative project delivery methods, including Similar Projects. The Respondent shall demonstrate an understanding of the interrelationship between design and construction of Similar Projects under the DB project delivery approach. In addition to the information required to be provided in this Section 5, Respondents shall also supply all other information relevant to the Owner's evaluation and ranking of Proposals under Section 6.

5.2.3 Project Understanding and Approach

The Respondent shall demonstrate its understanding of the Project, the Owner's objectives and how the Respondent's organization will promote innovation in design and contribute to the success of the Project. This information shall include Respondent's approach to advancing the design of the Project in a creative manner; how the Respondent intends to interface with the Owner and the Operating Corporation; and Respondent's proposed method for managing the Project schedule and budget so that the Respondent will meet agreed upon completion dates. The Respondent shall also identify any potential Project risks, constraints, issues, or special requirements.

5.2.4 Technical Qualifications

Respondents to the RFQ shall demonstrate their ability to undertake the Project by providing the technical experience and qualifications of the Respondent, its Significant Subcontractors, any additional team members with key experience related to the Project, and individual team members related to the obtaining of permits for, design, construction, and commissioning of Similar Projects.

The Owner reserves the right to conduct an investigation of the Respondent's and its Significant Subcontractors' and other team members' technical qualifications by contacting project references or accessing public information. As a minimum, the Respondent and its Significant Subcontractors and any other key team members shall provide information in subsections in Volume 1 as specified below to demonstrate technical qualifications.

5.2.4.1 Design

The Respondent shall provide its engineering, design, and permitting experience for the development and implementation of Similar Projects. The information submitted should demonstrate experience with the design and construction of Similar Projects as reflected on completed, currently operating projects. The information shall include Similar Projects where the design was completed in the last ten years in which individual team members have been involved, and Similar Projects with a construction value over \$100 million where the design has been performed or is being performed in the last five years. Information on any innovative approaches incorporated in these designs should be presented. The Respondent shall identify the team member responsible for key aspects of the design (i.e., architectural, structural, mechanical, instrumentation, QA/QC, etc.) and indicate current licenses and registrations. Additionally, the Respondent shall describe its design experience with designing aesthetically pleasing facilities, particularly in urban environments.

5.2.4.2 **Construction Experience**

The Respondent shall provide its experience with construction management, construction and maintaining quality control of construction, of Similar Projects completed in the last ten years. Describe record of budget and schedule performance for Similar Projects with a construction value of more than \$100 million performed or being performed in the last five years and significant disputes that have arisen during the design or construction of the project. Provide information on significant litigation, i.e., claims greater than or equal to \$100,000. Describe philosophy and experience with preparation and implementation of quality control plans and procedures. Include experience on Similar Projects for which construction was completed on a building adjacent to an existing facility. Describe any experience on Similar Projects which achieved LEED silver or gold certification. The Respondent may also provide descriptions of relevant experience related to other types of major vertical infrastructure projects in dense urban environments. Types of construction experience shall be identified with each project presented, i.e., construction only, or design-build. Emphasis shall be placed on construction experience in connection with DB projects and on construction experience with Similar Projects. Respondents shall provide its experience with safety programs established and the safety records accumulated by the members of the Project team. Identify any safety awards obtained in the last five years.

5.2.4.3 **Diversity Practices**

The Respondent shall complete the Diversity Practices Questionnaire set forth in Attachment D.

5.2.5 **Reference Projects**

In addition to providing technical qualifications and experience, the Respondent shall provide a list of a minimum of five, but not more than ten directly relevant Similar Projects completed within the past ten years that the Respondent has been involved with as a designer, builder or a combination thereof (Reference Projects) (see Attachment B, SOQ Submittal Form B-2). A brief description of the Reference Projects shall be provided, including the history of operation, current status, and a description of the Respondent's specific involvement in the Reference Projects and their relationship to the relevant experience information to be provided in accordance with Section 5.2.4. Although the Reference Projects may be located in the United States or abroad, emphasis shall be on experience in the United States. The Reference Projects will be used as references and will be considered by the Selection Committee in the evaluation of the Technical Qualifications under Section 6.

For each of the Reference Projects identified, provide the information required on Form C-2:

- Name of project
- Applicability and relevance of the referenced project to the Project
- SOQ submittal team participants (personnel and/or firms) and specific role(s) on the project
- Other key participants (firms)
- Team structure, management description
- Customer and owner

- Location of project
- Current status of project (design, construction, or operations phase) and number of years in operation
- Description of building systems and processes, including size and capacity
- Number of people employed and job categories for constructing the project
- Original and final construction contract amount
- Percent change orders through construction and cause
- Key project contact of Respondent for the project
- Key project contact of the customer, including position, address, and telephone number
- Respondent's key personnel involved with each major phase; if joint venture or partnership, indicate participating firms
- History of compliance with permit conditions and performance guarantees (if any)
- History of all claims, disputes and litigation over \$100,000 and how resolved

For each Reference Project presented, the Respondent must demonstrate qualifications and experience consistent with the development and implementation of the Reference Project. The Respondent shall provide information in a table formatted similar to that shown on Form C-2 of Attachment B.

5.2.6 **Bonding, Project Guarantor Capabilities, and Project Team Financial Qualifications**

The SOQ shall include the following subsections related to bonding capacity, Respondent and Project Guarantor capabilities and Project team financial qualifications:

- Bonding Capacity
- Project Guarantor Capabilities
- Financial Information
- Direct Financial Questions

Required information related to submittal of financial qualifications is set forth below.

5.2.6.1 **Bonding Capacity**

Respondent shall provide a notarized letter(s) from its surety (or sureties) acknowledging, among other things, that the Respondent's surety company has reviewed and understands the requirements of this RFQ, what the Respondent's bonding capacity for performance and payment bonds will be given the expected \$1+ billion Project value, and that the surety company intends to furnish the performance and payment bonds in favor of the Owner as

security for the performance of the Design-Builder's design-build work obligations, in the event an acceptable Design-Build Contract is negotiated between the Design-Builder and the Owner based on this RFQ, the RFP and the Proposal. The Respondent's surety (or sureties) must have a rating of A- or better in the latest revision of the A.M. Best Company's Insurance Report, must be authorized by law to do business in the State of New York, and must be listed in the U.S. Department of Treasury Circular 570. Such surety letter shall be included in Section 4 of the Respondent's SOQ.

5.2.6.2 **Project Guarantor Capabilities**

In its transmittal letter and within this section of its SOQ, the Respondent shall clearly identify the Project Guarantor in accordance with the requirements set forth in this Section and Section 2.9. In Attachment A-2 to its transmittal letter, the Project Guarantor, if other than the Respondent, shall provide a statement that it will absolutely and unconditionally guarantee the Project and the Respondent's performance of all of its obligations under the Design-Build Contract.

If a sole-purpose subsidiary is created as the Design-Builder, the parent company or one or more of the partner firms shall be the Project Guarantor to guarantee performance of the subsidiary's obligations. Also, if a subsidiary is formed or newly created to respond to this RFQ, the reasons for this action must be fully disclosed.

If the Project Guarantor has a relationship to the Respondent other than a parent/subsidiary relationship, then a detailed explanation of all past and present relationships between the Respondent and its Project Guarantor must be provided.

The entity that the Respondent submits as the Project Guarantor must be financially responsible for all of the Design-Builder's obligations under the Design-Build Contract. Although the Owner will accept multiple Project Guarantors, the Owner will not pre-qualify a Respondent that proposes to divide the financial responsibility for separate Contract Services among multiple Project Guarantors. If more than one Project Guarantor is proposed, each firm shall be jointly and severally obligated and shall independently execute the Guaranty Agreement. If the Project Guarantor is a joint venture, each firm in the joint venture shall be jointly and severally obligated and shall independently execute the Guaranty Agreement.

If the Project Guarantor is other than a United States entity, the Respondent shall describe any procedural or substantive limitations on the ability of the Owner to enforce the Guaranty Agreement (or Design-Build Contract, as applicable) against the Project Guarantor that are different from enforcing the Guaranty Agreement (or Design-Build Contract, as applicable) against a United States entity. For purposes hereof, a United States entity is one that is incorporated domestically or otherwise duly organized under the laws of the United States.

The Owner seeks a Project Guarantor with experience in developing and directing Similar Projects and the resources and management capability necessary to integrate the required expertise to implement the Project. In this section of the SOQ, Respondents who are proposing a Project Guarantor separate from the entity who would serve as the Design-Builder under the Design-Build Contract (as permitted pursuant to Section 2.9) shall describe the Project Guarantor's experience in developing and directing Similar Projects. In addition, Respondents shall identify key personnel of the Project Guarantor and describe their management capability and experience. Respondents who are proposing the entity who would serve as the Design-Builder under the Design-Build Contract as the Project Guarantor may refer to other sections of the SOQ to provide the required demonstration of experience and management capability.

5.2.6.3 **Financial Information**

Each Respondent shall furnish the financial information requested below for itself and its Project Guarantor, as applicable. If the SOQ is submitted by a consortium, a joint venture, or a partnership, the SOQ shall identify the parties and relationships and each participating firm of such consortium, joint venture, or partnership shall provide full disclosure information regarding their financial strength as specified in this subsection. If the Respondent or its Project Guarantor is not a public company, it shall provide independently audited financial statements and may request that the information be treated confidentially by the Owner. If any such party has been in existence less than three years, the information shall be provided for the period of its existence.

Please furnish the following financial information required from appropriate entities as listed below. If any of this information is not provided, the reason for its omission shall be described. If any of the following information is not in the English language, then a certified English translation shall be provided, including numeric conversion of amounts into U.S. dollars.

1. Evidence of the ability of the Project Guarantor to meet the funding needs of this Project.
2. Annual audited financial reports for (a) the Respondent (each of the past three years), and (b) the Project Guarantor (each of the past three years), prepared in accordance with Generally Accepted Accounting Principles (GAAP), and all relevant notes.
3. The most recent Form 10-K and Form 10-Q filed with the Securities and Exchange Commission (SEC) by (a) the Respondent, and (b) the Project Guarantor; or, if one or more of these parties are not regulated by the SEC, then the most recent quarterly audited financial report for each such party.
4. Completion of the "Financial Resources Data Form" (Form B-3 of Attachment B) by the Respondent and the Project Guarantor.
5. Completion of two "Bank Credit Reference Forms" (Form B-4 of Attachment B) by banks providing services to the Respondent and the Project Guarantor (i.e., two forms each).
6. Any credit reports, credit bulletins, or other published statements by recognized rating agencies (Standard & Poor's Rating Services, Moody's Investor Services, Dun & Bradstreet and Value Line) that have been issued or published within the past five years for the Respondent and the Project Guarantor.
7. Any additional information of the Respondent and Project Guarantor that is believed to be appropriate in fully reflecting the financial strength of the Respondent or its Project Guarantor. For example, the prospectus or offering statement for the Project Guarantor's or Respondent's latest security or equity offering can be provided.

Failure to provide any of the above information without adequate explanation is cause for rejection of the Respondent at the sole discretion of the Selection Committee.

5.2.6.4 **Direct Financial Questions**

The purpose of this Section is to elicit information pertaining to unfavorable factors or events that have the potential to adversely impact the Respondent's and the Project Guarantor's ability to honor their contractual commitments. To the extent that any of these questions are answered in a manner that indicates that any of these unfavorable factors or events are present or have occurred, it is the Respondent's sole responsibility to: (1) describe in detail the unfavorable factor or event; and (2) provide sufficient information to demonstrate to the Selection Committee that the unfavorable factor or event will not adversely impact the Respondent's or Project Guarantor's ability to honor its contractual commitments.

Each Respondent shall provide responses to each of the following questions concerning the business of the Respondent, its Project Guarantor and its Significant Subcontractors during the past five years (except where otherwise noted):

1. Material Adverse Changes in Financial Position
 - a) Describe any material historical, existing or anticipated changes in financial position of the Respondent or Project Guarantor including any material changes in the mode of conducting business, mergers, acquisitions, takeovers, joint ventures, and/or divestitures.
 - b) Describe any material historical or anticipated changes in financial position of the Significant Subcontractor(s), including any material changes in the mode of conducting business, mergers, acquisitions, takeovers, joint ventures, and divestitures.
2. Bankruptcy
 - a) Has the Respondent or Project Guarantor ever filed for bankruptcy? If so, when, and describe the impact it would have on the ability to honor contractual commitments?
 - b) Has any Significant Subcontractor, or affiliate of the Significant Subcontractor, ever filed for bankruptcy? If so, when, and describe the impact it would have on the ability to honor contractual commitments?
3. Liabilities and/or Potential Liabilities
 - a) List and briefly describe any threatened, pending or past legal proceeding and judgment, or any contingent liabilities, in which the Respondent, Project Guarantor, or any parents, affiliates and subsidiaries of the Respondent or Project Guarantor was or is a party that could adversely affect the Respondent's or Project Guarantor's financial position or ability to honor its contractual commitments to the Owner.
 - b) List and briefly described any threatened, pending or past legal proceeding and judgment in which the Respondent, Project Guarantor, or any parents, affiliates and subsidiaries of the Respondent or Project Guarantor was or is a party in the last 10 years concerning projects of a similar nature, including DB and DB-based projects.
 - c) List and briefly describe any threatened, pending or past legal proceeding and judgment, or any contingent liabilities, in which the Significant

Subcontractor, or any parents, affiliates and subsidiaries of the Significant Subcontractor was or is a party that could adversely affect the Subcontractor's financial position or ability to honor its contractual commitments in relation to the Project.

4. Completion of Contracts

Has the Respondent or any Significant Subcontractor failed to complete any contract, or has any contract been terminated due to alleged poor performance, default, or litigation.

5. Violation of Laws

Has the Respondent or any Significant Subcontractor been convicted of any criminal conduct or been found in violation of any federal, state, or local statute, regulation, or court order concerning antitrust, public contracting, employment discrimination, or prevailing wages? If so, describe the circumstances.

6. Debarred from Bidding

Has the Respondent or any Significant Subcontractor been debarred, or are under consideration for debarment, on public contracts by the federal government or by any governmental entity in New York or any other state? If so, describe the circumstances. Is the decision under review or was it upheld by formal legal and/or grievance process?

7. Conflicts of Interest

List and describe all engagements between the Respondent, the Project Guarantor, or any of their affiliates with any of the persons and firms listed in Section 3.1.

List and describe all engagements between the Significant Subcontractors or any of their affiliates with any of the persons and firms listed in Section 3.1 and Section 3.2.

5.3 Comments on Project Concepts

Within this RFQ, certain Project and contractual concepts have been addressed. Respondents may wish to provide comments via responses to this RFQ on the Project concepts. The Owner will review this information and may incorporate reasonable and accepted suggestions in the RFP and draft Design-Build Contract.

Respondents are encouraged to provide comments related to any or all of the following:

- Geotechnical explorations.
- Project schedule, including relating to the procurement schedule and the amount of time necessary between execution of a Design-Build Contract and the date of substantial completion and occupancy readiness.
- Development of Performance Standards for the New Facilities.

- Upon review of the key technical issues that need to be further developed or resolved prior to issuing the RFP or execution of the Design-Build Contract, Respondents may wish to provide comments related to aspects of the Project you feel may need refinement prior to issuance of the RFP.
- Bonding, Project Guarantor and Design-Build Contract security requirements as discussed in Sections 2.8 and 2.9.
- Project coordination with ongoing operations of the Existing Facilities.
- Project coordination with the related project described in Section 2.7 to this RFQ and Lincoln tunnel tubes running under the Project site, including the schedule for implementing the related project in conjunction with the implementation of the New Facilities.

Response to these items is voluntary and the responses will not affect the evaluation of Submittals. Comments should be limited to items that Respondents believe will enhance the DB solicitation process and allow for cost-competitive and creative proposals. Comments on the evaluation and selection criteria for the RFP will not be accepted.

6. EVALUATION AND RANKING OF SUBMISSIONS

SOQs may be reviewed by ESD, the Owner, the Operating Corporation, other State officials, and members of the Owner's Consultant Support Team and will be evaluated by the Selection Committee. The Selection Committee's short-list may be subject to approval, as required under applicable law and regulation, which may include approval of ESD's Board of Directors, the Owner's Board of Directors, the Public Authorities Control Board, the Comptroller of the State of New York, and the New York State Attorney General. When evaluating responsive SOQs, the following selection criteria will be considered with the accompanying weightings used to calculate an overall Proposal score:

- | | | |
|----|------------------------------------|-----|
| 1. | General Qualifications | 20% |
| 2. | Project Understanding and Approach | 10% |
| 3. | Technical Qualifications | 50% |

The following sub-criteria and weighting will be applied to the 50% Technical Qualifications Criteria:

- | | | |
|----|--------------------------------------------------------------------------|-------|
| a) | Design Experience | (20%) |
| b) | Construction Experience | (25%) |
| c) | Diversity Practices | (5%) |
| 4. | Project Guarantor Capabilities and Project Team Financial Qualifications | 20% |

The evaluation of the qualifications will be based on the submissions received as required by Section 5 of this RFQ, correspondence with Respondent teams and personnel references and analysis of other publicly available information and information otherwise made available to the Owner. Respondents shall submit all information in accordance with Section 5 of this RFQ. The Owner, at its sole discretion, shall have the right to seek clarifications from each of the Respondents.

ESD and CCDC also reserve the right to conduct interviews with or pose questions in writing to individual Respondents in order to clarify the content of their proposals and to ensure a full and complete understanding of each proposal. ESD and CCDC shall undertake to pursue uniformity in the questions it asks to Respondents to the extent practicable, but ESD and CCDC may ask different or additional questions to different Respondents in the context of any individual interview or in writing. ESD and CCDC shall convene a committee of staff who shall be permissible contacts for the purpose of such interviews, and Respondents who are invited will receive additional instructions upon their invitation.

6.1 General Qualifications (20%)

The criteria for the evaluation of the Respondent's General Qualifications are:

1. Respondent Project team information
 - Team structure, management and working history
 - Project organization
 - Work to be performed by Respondent and work to be subcontracted
 - Proposed staffing and description of staff working together on existing or past projects
2. DB and DB-based project experience and past performance on Similar Projects
 - Extent of past experience with DB and DB-based projects
 - Understanding of interrelationship between design and construction of Similar Projects
 - Experience with Similar Projects in New York City and New York State
3. Other General Qualifications Criteria
 - Demonstrated responsibility
 - Ability of the team or of a member or members of the team to comply with applicable requirements under Enabling Legislation, including the provisions of articles 145, 147 and 148 of the New York State Education Law, and the requirement that there be a Project Labor Agreement for the Project
 - Past record of compliance with the labor law, including prevailing wage requirements under State and federal law
 - Past record of compliance with existing labor standards and maintaining harmonious labor relations
 - Ability to responsibly and reliably undertake projects of this type and complexity of the New Facilities
 - Whether or not the Respondent or a person or entity with an interest of at least ten per centum in the Respondent, is debarred for having disregarded obligations to employees under the Davis-Bacon Act pursuant to 40 U.S.C. 3144 and 29 C.F.R. 5.12

6.2 Project Understanding and Approach (10%)

The criteria for the evaluation of the Respondent's Project Understanding and Approach will include:

1. Understanding of Owner objectives
2. Overall approach to managing, executing and implementing the Project
3. The quality, value, creativity, and innovation of the information submitted by Respondent pursuant to Section 5.3 of this RFQ

6.3 Technical Qualifications (50%)

The criteria for the evaluation of the Project team's Technical Qualifications will include:

1. Design Experience (20%)
 - Design experience and past performance on Similar Projects, including:
 - Similar Projects completed in last ten years in which individual team members have been involved
 - Satisfactory completion of Similar Projects performed or being performed by team members in the last ten years
 - Experience with innovative design solutions for issues similar to those for the Project
 - Experience designing aesthetically pleasing facilities, particularly in urban environments
 - Design and permitting experience in DB and DB-based projects
2. Construction Experience (25%)
 - Construction experience and past performance on Similar Projects, including
 - Similar projects completed in last ten years in which team members have been involved as builder
 - Satisfactory completion of Similar Projects performed or being performed by team members in the last ten years, including budget and schedule performance
 - Construction experience in DB and DB-based projects
 - Experience with preparation and implementation of quality control plans and procedures
 - Demonstrated record of completing projects on time or early

- Construction safety programs established on public works projects and job sites (as demonstrated by the experience modification rate in each of the last three years) and construction safety records accumulated, including
 - Adequacy of safety programs established
 - Accumulated safety records
 - Safety awards obtained in last three years
 - Current worker's compensation rate for construction team members
 - Experience with construction and commissioning of Projects with minimal disruption to operation and maintenance of adjacent facilities
3. Diversity Practices (5%)
- Respondents to the RFQ will be evaluated for Diversity Practices using the Diversity Practices Scoring Matrix set forth in Attachment D to this RFP.

6.4 Project Guarantor Capabilities and Project Team Financial Qualifications (20%)

All SOQs will be evaluated based on the information provided concerning the experience and management capabilities of the Project Guarantor, as well as the financial information provided for the Respondent, Project Guarantor and Significant Subcontractors in accordance with Section 5. The criteria for the evaluation of the Project Guarantor capabilities and team financial qualifications will include, among others:

1. Project Guarantor
 - The experience and management capability of the Project Guarantor to integrate the required expertise for the overall benefit of the Project
 - Experience and management capability of the Project Guarantor's key individuals
2. Financial Resources
 - Profitability and Growth (Return on Revenue, Return on Assets, Return on Net Worth, etc.)
 - Solvency (Total Net Worth, Current Liability Coverage, Leverage Ratio, Off-Balance Sheet or Contingent Liabilities etc.)
 - Efficiency (Total Assets to Revenues, Revenue to Net Working Capital, etc.)
 - Market Strength (Market to Book Ratio, Price to Earnings Ratio, etc.)
 - Liquidity Position
 - Risk of Materially Adverse Change to Financial Position
3. Credit Ratings

- Bond, Credit, and/or Other Ratings
 - Bank Credit References provided in the "Bank Credit Reference Form" (Form B-4 of Attachment B).
4. Ability to provide required performance and payment bonds
 5. Responses to the Direct Financial Questions

The Financial Resources sub-criteria will be evaluated based on the financial data provided in the "Financial Resources Data Form" (Form B-3 of Attachment B) and other information required pursuant to Section 5.2.6.2. Various analytical techniques will be used to assess the financial strength and stability of each Respondent and its Project Guarantor, focusing on profitability and growth, solvency, efficiency, market strength and ratings from credit agencies. The analysis will include an evaluation of specific financial indices and ratios in an effort to maximize objectivity and provide measures that are directly comparable among Respondents and Project Guarantors. The Credit Ratings sub-criteria will be evaluated based on the credit reports, credit bulletins and other published statements by recognized rating agencies in accordance with Section 5.2.6.2, as well as the information provided in the "Bank Credit Reference Form" (Form B-4 of Attachment B). Under the Responses to the Direct Financial Questions sub-criteria, the Selection Committee will pay particular attention to responses to those questions that speak to the Respondent's and Project Guarantor's ability to meet the financial obligations of a DB contract, including history of bankruptcies, material adverse changes in the Respondent's or Project Guarantor's financial position, criminal conduct and any bars to bidding in New York, or any other state.

Respondents are advised that information indicating inadequate financial strength for the Project or evidence of financial distress or potential financial distress may prevent the Respondent from advancing to the next stage of the selection process.

7. PROCUREMENT FORMS AND REQUIREMENTS

Additional requirements for this RFQ are described below. Relevant forms, where required to be submitted, must be executed and included in the submission in the same order as listed below:

- A. State Finance Law §§139-j and 139-k forms
- B. New York State Vendor Responsibility Questionnaire For-Profit Business Entity
- C. Iran Divestment Act Statement
- D. Non-Discrimination and Contractor & Supplier Diversity Requirements
- E. Encouraging the Use of NYS Businesses in Contract Performance Form
- F. Certification Under State Tax Law Section 5-a
- G. Schedule A (for review only—no separate form requirement)
- H. Project Sunlight (for review only—no separate form requirement)

7.1 State Finance Law Sections 139-j and 139-k forms

State Finance Law Sections 139-j and 139-k (collectively, the Procurement Requirements) apply to this RFQ. These Procurement Requirements: (1) govern permissible communications between potential respondents and the Owner or other involved governmental entities with respect to this RFQ; (2) provide for increased disclosure in the public procurement process

through identification of persons or organizations whose function is to influence procurement contracts, public works agreements and real property transactions; and (3) establish sanctions for knowing and willful violations of the provisions of the Procurement Requirements, including disqualification from eligibility for an award of any contract pursuant to this RFQ. Compliance with the Procurement Requirements requires that all communications regarding this RFQ, from the time of its issuance through final award and execution of any resulting Design-Build Contract (the Restricted Period), be conducted only with the designated contact persons listed below; the completion by Respondents of the Offerer Disclosure of Prior Non-Responsibility Determinations, and the Offerer's Affirmation of Understanding and Agreement pursuant to State Finance Law (each form is accessible at the Required Forms for Vendors link at the ESD web site under "RFPs/RFQs"); and periodic updating of such forms during the term of any contract resulting from this RFQ.

Respondents must submit the Offerer Disclosure of Prior Non-Responsibility Determinations, and the Offerer's Affirmation of Understanding and Agreement pursuant to State Finance Law as part of their submittal. Copies of these forms are available at:

http://www.esd.ny.gov/CorporateInformation/Data/RFPs/RequiredForms/SF_Law139_JK.pdf

The Procurement Requirements also require the Owner's staff to obtain and report certain information when contacted by prospective respondents during the Restricted Period, make a determination of the responsibility of Respondents and make all such information publicly available in accordance with applicable law. If a prospective respondent is found to have knowingly and willfully violated the State Finance Law provisions, that prospective respondent and its subsidiaries, related or successor entities will be determined to be a non-responsible Respondent and will not be awarded any contract issued pursuant to this solicitation. In addition, two such findings of non-responsibility within a four-year period can result in debarment from obtaining any New York State governmental procurement contract.

This is not a complete presentation of the provisions of the Procurement Requirements. A copy of State Finance Law Sections 139-j and 139-k can be found at:

<http://esd.ny.gov/CorporateInformation/RFPs.html> (under "Required forms for Vendors", "ESDC Policy Regarding Permissible Contacts under SFL 139").

All potential Respondents are solely responsible for full compliance with the Procurement Requirements. Both the prime consultant and any sub-consultants must complete the forms required above.

7.2 Vendor Responsibility

All Respondents to this RFQ must be "responsible," which in this context means that they must have the requisite financial ability, organizational capacity and legal authority to carry out their obligations under this RFQ, and in addition must demonstrate that both the Respondent and its principals have and will maintain the level of integrity needed to contract with New York State entities such as the Owner. Further, the Respondent must show satisfactory performance of all prior government contracts. Accordingly, the Design-Build Contract to be entered into between the Owner and the Selected Proposer, if any, shall include clauses providing that the Selected Proposer remain "responsible" throughout the term of the Design-Build Contract, that the Owner may suspend the Design-Build Contract if information is discovered that calls into question the responsibility of the contracting party, and that the Owner may terminate the Design-Build Contract based on a determination that the contracting party is non-responsible. On request, model language to this effect will be provided to any Respondent to this RFQ.

To assist in the determination of responsibility, the Owner requires that all Respondents register in the State's Vendor Responsibility System (VendRep System). The VendRep System allows business entities to enter and maintain their Vendor Responsibility Questionnaire information in a secure, centralized database. New York State Procurement Law

requires that state agencies award contracts only to responsible vendors. Respondents are to file the required Vendor Responsibility Questionnaire online via the VendRep System or may choose to complete and submit a paper questionnaire. Please include a copy of your VendRep submission receipt with your Proposal. If you submit a paper questionnaire please submit it using certified mail and provide a copy of the return receipt.

To enroll in and use the VendRep System, see the System Instructions available at www.osc.state.ny.us/vendrep or go directly to the VendRep system online at <https://portal.osc.state.ny.us>. For direct VendRep System user assistance, the Office of the State Comptroller's Help Desk may be reached at 866-370-4672 or 518-408-4672 or by email at helpdesk@osc.state.ny.us.

Respondents opting to file a paper questionnaire can obtain the appropriate questionnaire from the VendRep website http://www.osc.state.ny.us/vendrep/forms_vendor.htm and execute accordingly pertaining to the company's trade industry. Per the website, respondents are to "Select the questionnaire which best matches the business type (either For-Profit or Not-For-Profit) and business activity (Construction or Other)." For Owner RFPs concerning the purchase and redevelopment of real estate, it is most common for a Respondent to complete the form as a "Non-Construction" company. Unless the Respondent is primarily a Construction firm, the Respondent should thus fill out the Vendor Responsibility Questionnaire as a "Non-Construction" entity, either as a For-Profit or Not-For-Profit entity, depending on the Respondent organization type.

7.3 Iran Divestment Act

Every SOQ submitted to the Owner pursuant to a competitive solicitation must contain the following statement, signed by the Respondent on company letterhead and affirmed as true under penalty of perjury:

"By submission of this SOQ, each Respondent and each person signing on behalf of any Respondent certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each Respondent is not on the list created pursuant to paragraph (b) of subdivision 3 of section 165-a of the State Finance Law."

The list in question is maintained by the Office of General Services. No SOQ that fails to certify compliance with this requirement may be accepted as responsive.

7.4 Non-Discrimination and Contractor & Supplier Diversity Requirements

Business Participation Opportunities for MWBEs

Pursuant to New York State Executive Law Article 15-A and 5 NYCRR §§140-145, the Owner recognizes its obligation under the law to promote opportunities for maximum feasible participation of NYS certified Minority and Women-owned Business Enterprises (MWBEs) and the employment of minority group members and women in the performance of ESD's contracts. For purposes of this phase of the procurement, ESD encourages MWBEs to respond. For purposes of the second phase of the procurement, ESD will establish MWBE participation goals.

Diversity Practices

ESD has determined, pursuant to New York State Executive Law Article 15-A, that the assessment of the diversity practices of Respondents is practical, feasible, and appropriate.

Accordingly, Respondents shall be required to include as part of their response to this procurement the Diversity Practices Questionnaire set forth in Attachment D.

Business Participation Opportunities for SDVOBs

Article 17-B of the Executive Law enacted in 2014 acknowledges that Service-Disabled Veteran-Owned Businesses (SDVOBs) strongly contribute to the economies of the State and the nation. As defenders of our nation and in recognition of their economic activity in doing business in New York State, Respondents to this SOQ for the Design-Build Contract are strongly encouraged and expected to consider SDVOBs in the fulfillment of the requirements of the contract. Such partnering may be as subcontractors, suppliers, protégés or other supporting roles.

7.5 Certification under State Tax Law Section 5-a

Any contract resulting from this solicitation is also subject to the requirements of State Tax Law Section 5-a (STL 5-a). STL 5-a prohibits the Owner from approving any such contract with any entity if that entity or any of its affiliates, subcontractors or affiliates of any subcontractor makes sales within New York State of tangible personal property or taxable services having a value over \$300,000 and is not registered for sales and compensating use tax purposes. **To comply with STL 5-a, all Respondents to this solicitation must include in their SOQs a properly completed Form ST-220-CA, or an affidavit that the Respondent is not required to be registered with the State Department of Taxation and Finance. A copy of the ST-220-CA form and affidavit is accessible at the Required Forms for Vendors link at the ESD web site: labeled "Schedule A - Conditions Applicable to the Corporation's Agreements for Materials and Services (includes ST220 and all other required forms) at <http://esd.ny.gov/CorporateInformation/RFPs.html>.**

Also in accordance with the requirements of STL 5-a, any contract resulting from this solicitation will require periodic updating of the certifications contained in Form ST-220-CA. Solicitation responses that do not include a properly completed ST-220-CA will be considered incomplete and non-responsive and will not be considered for contract award. Only the prime consultant must complete Form ST 220-CA, but Schedule A to Form ST 220-CA requires detailed information from the sub-consultants, such as tax ID number, etc., if applicable. Moreover, if applicable, certificates of authority must be attached by the prime consultant and all the sub-consultants.

7.6 Schedule A

The draft Design-Build Contract to be included as an attachment to the RFP will define all Project terms and conditions and the Selected Proposer responsibilities in conformance with "Schedule A," which can be found at:

<http://esd.ny.gov/CorporateInformation/Data/ScheduleA.pdf>

Please note Respondents do not need to complete the entire Schedule A with the submission of their SOQ. However, Respondents should still review these terms, which are standard in all ESD contracts, and raise any concerns present prior to submission of their SOQ, as the Selected Proposer will need to accept these terms prior to execution of the Design-Build Contract.

7.7 Project Sunlight

This procurement is subject to the Public Integrity Reform Act of 2011. Under the Public Integrity Reform Act of 2011, "appearances" (broadly defined and including any substantive interaction that is meant to have an impact on the decision-making process of a state entity)

before a public benefit corporation such as the Owner by a person (also broadly defined) for the purposes of procuring a state contract for real property (as contemplated in this RFP) must be reported by the Owner to a database maintained by the State Office of General Services that is available to members of the public. If in doubt as to the applicability of Project Sunlight, Respondents and their advisors should consult the Laws of 2011, Ch. 399 for guidance.

ATTACHMENT A
STATEMENT OF QUALIFICATIONS TRANSMITTAL LETTER

Attachment A

NEW YORK CONVENTION CENTER DEVELOPMENT CORPORATION

JACOB K. JAVITS CONVENTION CENTER Expansion Project

Statement of Qualifications Transmittal Letter

(To be typed on Respondent's Letterhead)

[Date]

Re: Statement of Qualifications for the JACOB K. JAVITS CONVENTION CENTER Expansion Project.

_____ (the "Respondent") hereby submits its Statement of Qualifications ("SOQ") in response to the Request for Qualifications ("RFQ") for the JACOB K. JAVITS CONVENTION CENTER Expansion Project ("RFQ") issued by the New York Convention Center Development Corporation as amended.

As a duly authorized representative of the Respondent, I hereby certify, represent, and warrant, on behalf of the Respondent team, as follows in connection with the SOQ:

1. The Respondent acknowledges receipt of the RFQ and the following addenda:

<u>No.</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____

2. The submittal of the SOQ has been duly authorized by, and in all respects is binding upon, the Respondent. Attachment C-1 to this Transmittal Letter is a Certificate of Authorization which evidences my authority to submit the SOQ and bind the Respondent.

3. The Respondent has completely reviewed and understands and agrees to be bound by the requirements of the RFQ, including all addenda thereto.

4. The Respondent's obligations that will be contained in the Design-Build Contract will be guaranteed irrevocably, absolutely and unconditionally by _____ ("the Guarantor"), as evidenced by the Guarantor Acknowledgment certificate submitted as Attachment A-2 to this Transmittal Letter. The Certificate of Authorization submitted as Attachment A-3 to this Transmittal Letter evidences the individual's authority to submit the Guarantor Acknowledgment certificate and bind the Guarantor.

5. All information and statements contained in the SOQ are current, correct and complete, and are made with full knowledge that the Owner will rely on such information and statements in determining whether to pre-qualify the Respondent in accordance with this RFQ.

6. The SOQ has been prepared and is submitted without collusion, fraud or any other action taken in restraint of free and open competition for the services contemplated by the RFQ.

7. Neither the Respondent, the Project Guarantor, any Significant Subcontractor, nor any Project team member is currently suspended or debarred from doing business with any governmental entity.

8. The Respondent has reviewed all of the engagements and pending engagements of the Respondent and the Project Guarantor, and no potential exists for any conflict of interest or unfair advantage.

9. No person or selling agency has been employed or retained to solicit the award of the Design-Build Contract under an arrangement for a commission, percentage, brokerage or contingency fee or on any other success fee basis, except bona fide employees of the Respondent or the Project Guarantor.

10. The principal contact person who will serve as the interface between the Owner and the Respondent for all communications is:

NAME: _____
TITLE: _____
ADDRESS: _____

PHONE _____
FAX: _____
E-MAIL: _____

11. The key technical and legal representatives available to provide timely response to written inquiries submitted, and to attend meetings requested by the Owner are:

Technical Representative:

NAME: _____
TITLE: _____
ADDRESS: _____

PHONE _____
FAX: _____
E-MAIL: _____

Legal Representative:

NAME: _____
TITLE: _____
ADDRESS: _____

PHONE _____
FAX: _____
E-MAIL: _____

Name of Respondent

Name of Designated Signatory

Signature

Title

(Notary Public)

State of _____

County of _____

On this ____ day of _____, 2016, before me appeared _____, personally known to me to be the person described in and who executed this Statement of Qualifications Transmittal Letter and acknowledged that (she/he) signed the same freely and voluntarily for the uses and purposes therein described.

In witness thereof, I have hereunto set my hand and affixed by official seal the day and year last written above.

Notary Public in and for the state of _____

(SEAL)

(Name printed)

Residing at _____

My commission expires _____

Attachment A-1

CERTIFICATE OF AUTHORIZATION*

I, _____, a resident of _____ in the State of _____, DO HEREBY CERTIFY that I am the Clerk/Secretary of _____, a corporation duly organized and existing under and by virtue of the laws of _____; that I have custody of the records of the corporation; and that as of the date of this certification, _____ holds the title of _____ the corporation, and is authorized to execute and deliver in the name and on behalf of the corporation the Statement of Qualifications ("SOQ") submitted by the corporation in response to the Request for Qualifications for the JACOB K. JAVITS CONVENTION CENTER Expansion Project issued on March __, 2016, as amended; and all documents, letters, certificates and other instruments which have been executed by such officer on behalf of the corporation in connection therewith.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of the corporation this ____ day of _____ 2016.

(Affix Seal Here)

Clerk/Secretary

** **Note:** Separate certifications shall be submitted if more than one corporate officer has executed documents as part of the SOQ. Respondents shall make appropriate conforming modifications to this Certificate in the event that the signatory's address is outside of the United States.*

Attachment A-2

GUARANTOR ACKNOWLEDGMENT *

(to be typed on Guarantor's Letterhead)

_____ ("the Respondent") has submitted herewith a Statement of Qualifications ("SOQ") in response to the New York Convention Center Development Corporation's March __, 2016 Request for Qualifications for the JACOB K. JAVITS CONVENTION CENTER Expansion Project as amended (the RFQ) pursuant to which it is seeking to be qualified by the Owner to provide the Contract Services described in the RFQ.

The Guarantor hereby certifies that it will irrevocably, absolutely and unconditionally guarantee pursuant to a Guaranty Agreement the performance of all of the Respondent's obligations under the Design-Build Contract to be issued with the Owner's Request for Proposals ("RFP"), in the event the Respondent is issued a RFP by the Owner and selected for execution of the Design-Build Contract by the Owner.

Name of Project Guarantor

Name of Authorized Signatory

Signature

Title

** If more than one Project Guarantor is proposed, each firm shall be jointly and severally obligated and shall independently provide an executed copy of this Guarantor Acknowledgment. If a Project Guarantor is a joint venture, each firm in the joint venture shall be jointly and severally obligated and shall independently provide an executed copy of this Guarantor Acknowledgment.*

Attachment A-3

GUARANTOR CERTIFICATE OF AUTHORIZATION*

I, _____, a resident of _____ in the State of _____ DO HEREBY CERTIFY that I am the Clerk/Secretary of _____, a corporation duly organized and existing under and by virtue of the laws of the State of _____; that I have custody of the records of the corporation; and that as of the date of this certification, _____ holds the title of _____ of the corporation, and is authorized to execute and deliver in the name and on behalf of the corporation the Guarantor Acknowledgment submitted by the corporation as part of _____ ("the Respondent's") response to the Request for Qualifications for the JACOB K. JAVITS CONVENTION CENTER Expansion Project issued by New York Convention Center Development Corporation on March __, 2016, as amended; and all documents, letters, certificates and other instruments which have been executed by such officer on behalf of the corporation in connection therewith.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of the corporation this _____ day of _____, 2016.

(Affix Seal Here)

(Clerk/Secretary)

**Note: Separate certifications shall be submitted if more than one corporate officer has executed the Guarantor Acknowledgment as part of the SOQ. Respondents shall make appropriate conforming modifications to this Certificate in the event the signatory's address is outside of the United States.*

Attachment A-4

LICENSES AND CERTIFICATES

Provide copies of the licenses and certificates of registration for those members of the Respondent's Team leading the design and construction efforts.

ATTACHMENT B
FORMS

**SOQ Submittal Form B-1
Key Project Staff**

(Provide the information requested on this form for each key project staff member as defined in Section 5.2.2; attach additional pages if necessary)

General Information

Name: _____

Firm: _____

Title: _____

Years employed by firm: _____ years

Total Professional Experience _____ years

Professional Registration and Licenses (type/state/year/license number):

Reference Project: _____

Involvement in Reference Project: _____

JACOB K. JAVITS CONVENTION CENTER Expansion Project-specific information

Title/Assignment _____

Description of Role/Responsibilities:

Commitment to
Javits Project:(1)

Pre-construction _____% Design _____%
Construction: _____% Commissioning: _____%
Overall: _____%

Relevant Project Experience: (2)

Project: _____
Location: _____
Current Status: _____
Date of Involvement: from _____ through _____

Description of Specific Roles and Responsibilities:

Respondent's Client Contact Person

Name: _____

Title: _____

Address: _____

Phone: _____

Fax: _____

Email: _____

Notes relative to Form B-1:

1. Commitment indicates the amount of time (in percent) that the staff person would be available to work on the Project during the pre-construction, design, construction and commissioning phases of the Project. Indicate by "N/A" where the individual is not proposed to be involved in a particular phase of the Project. For example, if a person would be available 20 hours a week out of a 40 hour work week, reply 50%.

2. Provide this information for as many projects as are applicable.

**SOQ Submittal Form B-2
Relevant Project Experience**

Provide information requested in Section 5.2.4 in a format similar to that shown below. This form may be duplicated for additional Reference Projects. Supplemental sheets may be attached with reference project number and category identified.

Project Name:			Reference Project No.:
Type of Project:	<input type="checkbox"/> Design	<input type="checkbox"/> Construction	
	<input type="checkbox"/> Design-Build		<input type="checkbox"/> Other
Respondent Role on Project:	<input type="checkbox"/> Design	<input type="checkbox"/> Construction	<input type="checkbox"/> Operation
	<input type="checkbox"/> Design-Build		<input type="checkbox"/> Other
Description of Respondent Role:			
A. Applicability and relevance of referenced project to the Project:			
B. SOQ submittal team participants (personnel):			
C. Other key participants (firms):			
D. Team Structure, management description:			
E. Customer and owner:			
F. Location of project:			
G. Current status of project (design, construction, or operations phase) and number of years of operation:			
H. Description of project, including size and capacity:			

J.	Original and final construction contract amount:
K.	Percent change orders through construction and cause:
O.	Sources of funding:
S.	History of compliance with permit conditions and performance guarantees (if any):
T.	Description of any innovation employed on project:
U.	Respondent's key personnel:
V.	Key project contact of Customer (Name, address, telephone, fax, e-mail):
W.	Key project contact of Respondent (Name, address, telephone, fax, e-mail):

**SOQ Submittal Form B-3
Financial Resources Data**

Name: _____

Project Role: _____

		2013	2014	2015
A	Operating Revenues			
B	Operating Expense (not including Depreciation and Amortization)			
C	Depreciation and Amortization			
D	Operating Income (A-B-C)			
E	Net Income			
F	Total Assets			
G	Current Assets			
H	Total Liabilities			
I	Current Liabilities			
J	Net Worth (Equity) (F-H)			
K	Market Price per Share (as of 12/31/15)			
L	No. of Outstanding Shares (as of 2/16)			

The Respondent shall complete SOQ Form B-3 for both the Design-Builder and the Guarantor.

**SOQ Submittal Form B-4
Bank Credit Reference**

Please provide the following information for the Respondent and Project Guarantor. Also, sign and date the form.

Bank Reference for _____ ("Design-Builder")

Name of banking organization

Address _____

Contact Individual _____

Phone _____ Fax _____

Please answer the following questions:

1. Has your organization extended credit to the Design-Builder in the past five years?
2. Has the Design-Builder ever defaulted on a loan with your institution?
3. Has the Design-Builder's credit history included any instances of delinquent payments?
4. To your knowledge, has the Design-Builder ever filed for bankruptcy or been involved in any bankruptcy proceedings?
5. To your knowledge, have any of the corporate officers of the Design-Builder ever been in default on a loan?
6. To your knowledge, has any creditor ever filed any criminal charges against the Design-Builder?
7. Please discuss any other questions or issues that may have come out in any financial due diligence evaluation or credit check performed by your institution.
8. Overall, how would you rank the financial stability or credit worthiness of the Design-Builder (e.g. excellent, good, satisfactory, poor)?

Signature

Date

ATTACHMENT C
PROJECT CONCEPT REPORT

The Jacob K. Javits Convention Center Expansion and Renovation

**Volume X:
Truck Marshalling & Expansion Proposal
Concept Estimate**

11 December 2015

November 25, 2015

Mrs. Sarah Saint-Amand
President
Convention Center Development Corporation
633 Third Avenue
New York, New York 10017

Re: Javits Convention Center Expansion
Truck Marshalling & Expansion Proposal

Dear Sarah,

In response to the CCDC's request to develop a concept design for an Expo & Meeting Room Expansion in conjunction with a Truck Marshalling facility on the 38-40th Street site, we have developed the attached set of documents for concept pricing purposes. The work includes an architectural concept for the organization of the key building functions and program, circulation, massing, as well as concepts for the building enclosure.

The architectural narrative lists the programmatic parameters used by the Team in the development of this concept, describes the Program for this expansion by level and the main features and elements of the proposed architectural concept. It also includes a Building Code and Plumbing Code analysis highlighting the main sections of the Code relevant to the design, and analyzing their impact.

Included is the concept design work of our primary consultants together with sketches, steel tonnage or other relevant information that can be used for pricing as follows:

- In the Geotechnical section you will find an analysis of the subsurface conditions, and some recommendation and order of magnitude for the number and size of caissons or other substructure required to support this building.
- In the Site/ Civil section is a description of existing easements, sewers, PANYNJ electrical bank and tunnels, and their impact on the design, along with an approach to site drainage and retainage tank requirements. Estimates of excavation quantities are also included.
- The Structural engineering section describes the structural concept for long span girders and truss sections required to span the expo floor and support the meeting room / Ballroom floors and the pre-function layout while allowing truck traffic and movements at Level 1 and the four levels between 39th Street and 40th Street.

- The MEP, FP, AV, Telecom narrative covers the design criteria, scope and concept design principles for each one of those disciplines.
- The Traffic/ Transportation section shows a series of truck movement/ truck turn analyses performed by our consultant to test various concept design layouts for trailer storage in the Truck Marshalling portion of the expansion.
- The Vertical Transportation section identifies the worse case scenarios and requirements for the movement of people and goods between key program areas within the building at peak periods.
- Program parameters for the food service/ catering component of the building were established with the help of our Food Service Consultant.

Architectural Concept Design drawings as well as Structural, MEP, Site/ Civil and Geotechnical drawings are included in the Appendix.

Further studies and analysis will be required at the beginning of the Schematic Design phase to:

- Further coordinate the structural system and geotechnical parameters, in particular with respect to the adjacencies to the Lincoln Tunnel Center and North Tubes.
- Verify the interface of multiple functions, people movements and destinations in the Entry Pavilion and the feasibility of building this new structure with minimal disruption to the continuing operation of the Javits Center.
- Further coordinate and optimize the flow of truck movements in the trailer storage/ loading dock level
- Refine the architectural expression in relation to the existing building

We look forward to the continuing development of the design of this Expansion once you have reviewed the forthcoming cost estimate and find it appropriate and timely for us to do so.

With Kind Regards,



Larry Dalziel, AIA
Senior Project Manager

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1.3 PARTICIPANTS

Owner, Design Team and Consultant List

The following participants were involved in the development and review of this concept design package:

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2.1 ARCHITECTURAL DESIGN

2.1.1 Introduction

Truck Marshalling / Expansion Building Program

The proposed expansion will include four levels of truck marshalling / trailer storage and service areas, one level of Exhibition space expansion contiguous with Level 3, one level of Meeting Rooms, a 56,000 square foot Ballroom with operable partitions to double as meeting room space, three levels of Prefunction and Break-out areas, as well as the required attendant spaces such as back-of-house and storage mezzanines, Ballroom Kitchen, vertical transportation and service cores.

The following programmatic parameters were used by the Team:

- The Convention Center must remain in continuous operation.
- Truck circulation and drayage movement must improve from the current system
- The building must be as efficient as possible
- Truck circulation must be simple
- At least 200 trailers must be stored, marshalled and/or loading on site
- Trucks must have direct access to existing L1 and L3 loading bays
- Provide new direct loading onto L1 and L3 from the new expansion building
- Truck Marshalling Building must be able to accommodate a variety of uses [Move-In / Move-out; Drayage movement; Trailer Storage] and be able to be utilized such that different functions can be simultaneously configured for different Hall needs
- A new active roof is to be built above the highest level of Truck Marshalling
- Transformer Yard will be elevated out of the flood plane and service will be provided to meet the increased electrical demand.
- No less than 760,000sf of exposition area must be available at all times.
- Lost Expo Area from elimination of Javits North to be replaced in Expo Expansion.
- Maximize contiguous exposition space on Level 3.
- Provide additional Meeting Room space to improve the meeting-room-to-prime-expo ratio and bring it closer to industry standard.
- Provide direct circulation access and visual connection between Level 3 Expo and the new Javits Meeting Room "Wing" in order to maximize the opportunity for combined branding.

- Expansion designed to comply with the 2014 NYC Building Code and EO111, and to be certifiable at a minimum as LEED Silver.

2.1.2 Site and Context

The expansion will take place north from the existing building and extend to West 40th Street.

Over the process of the study the team analyzed the following constraints on the site:

- Existing and Proposed Egress requirements
- Utilities/ manhole access requirements.
- The Port Authority buildings, tunnels and electrical bank
- The utilities in West 39th Street including sewers, water mains, telecommunications and associated easements.
- The existing Javits Center loading dock ramps.
- Service access from Twelfth Avenue
- Public entrance and access from Eleventh Avenue.

2.1.3 Building Program

Based on direction and feedback from CCOC / CCDC, there is a direct need to eliminate the use of the 33/34 site for truck marshalling and trailer storage. In addition, there is the added need to eliminate truck parking and idling along the City streets within the new Hudson Yards development district and its environs. Our goal is to achieve these requirements while increasing the value of the Javits Center and increase its ability to draw the biggest and best events in the nation.

As detailed in the Technical Memorandum of 11 July 2006, and as summarized on p.5 of that document, in order to compete for the larger conventions and events, The Javits Center would need to:

1. Expand the amount of Prime Exposition space to create a significant area of contiguous space, while providing large amounts of additional meeting space
2. Provide ballroom space
3. Bring the facility into a state of good repair
4. Create an efficient Truck Marshalling and Loading Facility
5. Provide a large, directly connected headquarters hotel

The Renovation and Expansion project directly addressed the needs on item #3. This Truck Marshalling / Expansion Building project will directly address the needs of items 1, 2 and 4.

The Program developed creates:

- An efficient Truck Marshalling Building
- Takes trucks off of the Streets and out of the 33/ 34 site
- Adds new direct loading to L1 Expo and L3 Expo
- Provides no loss in Expo Space through new L3 contiguous expo space
- Increases the Meeting Room / Exposition Area from 1:25 closer to the industry standard of 1:8 – 1:2

This is consistent with most of JIIA's previous expansion studies based on the premise that putting any program other than exhibition space at Elev. 32' "locks-in" the current exhibition space in a manner that is undesirable for future growth.

Truck Marshalling; Trailer Storage; Drayage; Loading Facility

Trailers currently stored on the 33-34th Street site are intended to be relocated to free that site for development. The trailers need to remain close to the Javits Center to facilitate expedient loading, unloading, and storage of goods near the shows they serve. Marshalling currently occurs with trucks idling nearby on City streets, awaiting their allotted time to approach the loading docks.

This concept allows for storage of a total of 131 trailer berths sized for WB-67 trailers, 27 new loading docks and 56 marshalling positions over four floors all under roof.

Level 0A [-12.0']

This level provides primarily below grade Truck Marshalling or Trailer Storage. Access to this level is from the Main Truck Entry Level 1A. The configuration of this level acknowledges the site constraints of the existing Lincoln Tunnel, and existing utilities to remain. There is no direct access to the main Javits facility from this level.

This level provides:

- 56 units of Trailer Storage

Level 1A [+ 8.0']

This level provides the main truck entry to the facility at the SE corner of 40th Street and Twelfth Avenue. At this level, trucks will be able to circulate throughout the Marshalling / Trailer Storage building, or proceed directly to the existing ramps to the existing loading docks at L1 and L3. Additionally, new L1 loading docks are provided to allow direct loading to the north portions of L1 Expo. Finally, a truck weigh station will be provided at this level.

This level provides:

- 47 Marshalled Trucks
- 8 units of Trailer Storage
- 18 new Loading Berths

2.0 Expansion Concept Design

Level 3A [+28.0']

This level provides primarily trailer storage and new loading to the expanded Level 3 Expo Area [see below]. Access to this level is via the north ramps, which access each level of the new Truck Marshalling / Trailer Storage facility.

This level provides:

- 27 units of Trailer Storage
- 18 new Loading Berths [including a truck ramp to the expanded Level 3 Expo floor]

Level 3M [+52.0']

This level provides primarily trailer storage. Access to this level is via the north ramps, which provides access to each level of the new Truck Marshalling / Trailer Storage facility

This level provides:

- 49 units of Trailer Storage

Roof / Level 4 [+70.0']

This level provides an active and passive planted roof-scape with direct access to the new Meeting Room Level 4. The roof will also serve as rainwater detention from this and other part of the expansion roof areas and will contain a Photovoltaic (PV) array.

Exposition Expansion; Meeting Room Facility; Active Roof

Level 3 Expo would be enlarged by 92,000 SF from 411,000 SF to 503,000 SF to reach the goal of 500,000 SF of flat plate contiguous prime exhibition space. The Prime Expo expansion will have a column spacing of 150' clear span with trusses spaced 45' on center, floor boxes on a 30' x 30' module, and clear vertical heights of at least 37'.

Fixed Meeting Room space within the existing Javits Center is, by industry standards, a relatively low ratio of Meeting Rooms to Prime Expo. We are proposing that this expansion incorporate one new floor of dedicated sub-dividable meeting space with over 20 combinations of meeting rooms for a total of 49,770 SF.

In support of the meeting room function, adequate back-of-house space is provided at each meeting room level and storage mezzanines (Elev. 85'-0" and Elev. 107'-0") for Chair/table storage as well as pantries for re-heat and final food preparation. Each pantry would be linked by service elevators to a receiving area on Level 1 and a full Kitchen on Level 5.

Level 2 [+18.0'] Concourse/Entry Expansion

This level provides a primary dedicated entrance experience to the Expansion Atrium and direct connection to the Javits Main Concourse. The meeting rooms and Expo Hall are entered through a pre-function and registration area directly accessed from this Atrium on the east side. Elevators and Escalators are conveniently located within the space to circulate vertically to the pre-function areas. Coat and luggage storage is provided at this Level.

This level provides:

- 12,100 SF Entrance Lobby
- 5,400 SF Coat and Luggage Storage
- 6 Elevators to Expo & Meeting Levels above

Level 3 [+32.0'] Exposition Expansion

This level provides primarily expanded Exposition Area. New Structure is required to be located on a module that facilitates industry standards for exhibition functions. Thirty foot spacing accommodates display booths and walking aisles for exhibition uses and is used as the smallest dimension in the space planning for exhibition spaces. The hall is entered through a pre-function and registration area on the east side. Direct loading is provided at the north from the new Truck Marshalling facility.

This level provides:

- 92,000 SF of Prime Expo area
- 7,400 SF of Pre-function area
- 16,700 SF of support / service and back of house area

Level 4 [+85.0'] Meeting Room / Active Roof [+70.0']

This level provides primarily new Meeting Rooms. Entry to the space will be through a Pre-function and Entry area on the south and east sides. There will be a direct connection via a stair and elevator from this level to an active planted roof to the north. Pre-function and Break-out areas will be available to the meeting rooms.

This level provides:

- 49,700 SF of Meeting Room area
- 39,900 SF of Prefunction area
- 13,320 SF of support / service and back of house area
- 22,200 SF of exterior space dedicated to Convention users

Level 5 [+107.0'] Ballroom / Convertible to Meeting Rooms

This level provides primarily a new Ballroom and support facilities including a full banquet Kitchen. Entry to the space will be from the south Pre-function which is connected to vertical circulation within the Atrium. The Ballroom will contain operable partitions which will allow the Ballroom to be divided to provide either smaller Ballroom type venues or larger meeting rooms.

This level provides:

- 58,000 SF of Ballroom area
- Ballroom divides into three smaller venues of 24,100 SF, 20,700 SF & 13,200 SF
- 42,400 SF of Prefunction area
- 14,160 SF of Kitchen, support / service, and back of house area

Roof Level (Elev. 132'-0") Back-of-House Bar

A Back-of-House zone running east-west occurs above an between the Truck Marshalling and the Expo/Meeting Room portions of the building. Most of the mechanical roof-top units will occur on this roof. The rational layout of rooftop mechanical units efficiently serve each level of the expansion through ducted supplies and returns will be developed. Refer to the Mechanical Section of this report for a detailed description of these systems.

Roof Level (Elev. 167'-0") Ballroom Roof

The roof above the Ballroom will be a "saw tooth" configuration to assist with daylighting and drainage. Structural trusses will form the vertical component of the saw tooth. Gutters and rainwater delivery will occur at the bottom of the saw tooth.

2.1.4 Architectural Response & Concept

The concept for this expansion responds to site constraints in the following ways:

- The renovated North Façade will incorporate large openings and links between the existing Level 3 exhibition floor and the additional exhibition floor area on that portion of the site between 38-39th Street. Existing Level 1 egress will be re-routed on grade to circumvent the new loading docks and trailer storage area, existing mechanical units currently serving the existing building at-grade will be relocated to an area west of the Level 1 loading dock and east of the existing truck ramps.
- Structure for the expansion will be located to avoid disruption to the Port Authority Tunnels. The electrical duct bank between the two ventilation buildings will need to be relocated.
- Truck access to the facility must take into account [1] existing site grading; [2] existing Level 1 Expo elevation, [3] existing loading ramps and [4] top of the Lincoln Tunnel structure. All four of these conditions must be met in order to satisfy the program.
- The existing Javits Center truck ramps shall remain intact.

The architectural concept is articulated around the following components:

Efficient Truck Marshalling / Trailer Storage Facility: Simple Circulation & Minimal Building

Creation of a simple circulation system allowing for the greatest number of trailers storage and for ease of use by over the road trucks as well as local decorators who would have more familiarity of the building is the objective. Ease of connection between levels allows for multiple and varied configurations of the building; for use in Move-in / Move out; During a Show; and Trailer Storage. Straight ramps allow for the most efficient configuration for truck movement, and allow for the development of as tight of a building footprint as possible. Reduction in building width allows for economy in structural systems and logical parking configurations due to minimal interior columns in drive lanes.

In an operational mode, the proposed building will handle 150% more than the target number of 200 Trucks while still providing new Loading to Level 1 Expo and direct loading to the Level 3 expanded Expo floor.

Physical & Functional Link to Existing Building: Transitional Space & Vertical Access

A 55' wide pre-function space between the existing building and the bulk of the new building, serves as a naturally lit transitional

space between the various levels of the existing and new buildings.

An up and a down escalator system coupled with six public elevators serve as the main vertical circulation link between exhibit floors and meeting room floors. This vertical circulation system is configured in such a way as to limit the number of new "control points" required at each exhibit floor.

This dramatic element visible on the north end at the juncture between the current and expanded Level 3 Expo, would provide visual connection and direct access between the exhibit and meeting room programs. This will greatly improve the Convention Center's ability to attract shows with large meeting room needs and allow for common "branding" of those meeting rooms with the corresponding exhibit floors.

Internal Organization and Massing: Clear Spans and Programmatic Identity

The structural long span concept for the Meeting Room floor and the Ballroom roof allow for a simple and relatively light weight structure to infill between to support the Ballroom floor. The Meeting Room floor is organized by the south pre-function concourse, egress access to the east and access to the roof at the northwest corner. The Ballroom floor is similarly organized but without direct access to the Truck Marshalling roof plaza.

Entry Plaza Access and Concourse Circulation: Entry Pavilion

A new Entry Pavilion will provide access and entry off of the Level 2 inner roadway / plaza. It will house all the pre-function and registration space required by the new Exhibit Hall and some of the pre-function space required by the Meeting Room floor. This entry pavilion is accessed through a new vestibule, in addition to the four Concourse and two Crystal Palace vestibules that were part of the main building's renovation plan. It provides vertical access through an escalator/ elevator system to the new Exhibit Hall and Meeting Room levels.

Building Enclosure

The building enclosure for the Expansion would use some of the same elements of the renovated building – namely Stainless Steel/ Metal Panels and Glass Curtain Wall systems.

The North Façade will tend to be more opaque and translucent than some of the other façades, incorporating metal panels, louvers and perforated metal.

The West façade features large windows overlooking the Hudson River from the Ballroom, the Meeting Rooms and the pre-function corridors.

The South façade will bring in natural light to the main East-West circulation spine (with sun control devices) and to the through a series of saw tooth roof clearstories. The pre-function and entry pavilion on Eleventh Avenue features large South and East facing windows with views towards the city and the inner roadway/ Plaza.

2.1.5 LEED Silver/ EO111 Provisions

It is anticipated that this Expansion would be filed as a standalone project under LEED, separate from the recently completed LEED Silver Javits renovation. Beyond the requirements of EO111 which continue to apply, in order to meet the increasingly stringent energy conservation requirements of the NYS Energy Conservation Code and LEED Silver certification under LEED, a high-performance, energy saving building enclosure with high R-values and low shading coefficients will be required. Compliance with all applicable limits for lighting design, water efficient plumbing fixtures and high-efficiency Mechanical/ HVAC equipment and controls, site water/ retention etc will require careful analysis and selection in the next phase of design. For now they are addressed by each Consultant at a conceptual level.

2.1.6 Building Code Analysis

(Based on 2014 NYC Building Code)

Occupancy Classifications and Separations

Primary Building Occupancy:

- Group A-3 Assembly per BC 303.1

Accessory Occupancies:

- Group S-2 Moderate Hazard Storage (combustible) per BC 311.2.
- Group S-2 Low Hazard Storage (non-combustible, parking) per BC 311.3.

Separation between Occupancies per BC table 302.3.2:

- A-3/S-1: 3HR
- A-3/S-2: 2HR

Construction Classification

Construction Type 1-B per BC table 503:

- Maximum Area: Group A-3, unlimited.
- Maximum Area: Group A-3, unlimited.

High-Rise Requirements

Per BC section 403 the proposed Expansion is classified as a high-rise with requirements as listed below.

Definition: Buildings having occupied floors located more than 75 feet above the lowest level of fire department vehicle access.

- 403.2 Full sprinkler coverage is required.
- 403.5 Automatic smoke detection is required.
- 403.6 An emergency voice/alarm communication system is required.
- 403.7 A two-way fire department communication system is required.
- 403.8 A fire command center is required.
- 403.9 Elevator lobbies with walls constructed as smoke partitions are required when elevators open into a corridor; street floor lobbies and pressurized elevator shafts are not required to be provided with elevator lobbies.
- 403.11 Emergency power system must provide power to building critical life safety systems.
- 403.13 Every required exit stairway serving occupied floors more than 75 feet about the lowest level of fire department vehicle access is required to be a smoke proof exit enclosure.
- 403.16 Photoluminescent exit path markings are required

Atrium Requirements

Definition: An opening connecting three or more stories other than enclosed stairways, shafts, etc. Stories, as used in this definition, do not include balconies within assembly groups or mezzanines

- 404.3 Automatic sprinkler protection is required for the entire building (also see 403.2)
- 404.4 A smoke control system is required; smoke control is not required for floor openings for escalators or non egress stairs in fully sprinklered buildings under the following circumstances:
 - Where the area of the floor opening between stories does not exceed twice the horizontal projected area of the escalator or stairway and the opening is protected by a draft curtain and closely spaced sprinklers; this application is limited to openings that do not connect more than four stories
 - Where the opening is protected by approved power operated, automatic shutters of noncombustible construction and a fire resistance rating of not less than 1.5 hours at every floor penetrated.
- 404.5 Atriums shall be separated from adjacent spaces by a 2 hour fire barrier; instead of a 2 hour fire barrier, it is acceptable to use a glass or glass block wall where automatic sprinklers are spaced 6 feet or less along both sides of the separation wall, or on the room side only if there is not a walkway on the atrium side. The adjacent spaces of any three floors of the atrium shall not be required to be separated from the atrium where such spaces are included in computing the atrium volume for the design of the smoke control system.
- 404.6 Emergency power shall be provided to smoke control equipment
- 404.7 Interior finishes for the atrium walls and ceiling shall not be less than Class B
- 404.8 Except for the lowest level of the atrium, the portion of exit access travel distance within the atrium space shall not exceed 200 feet

Impact on the Design:

Both the Interstitial Escalator/Elevator circulation space and the new Entry Pavilion/ lobby will be classified as an Atrium.

- As such, any areas that are not separated from the entry lobby as described in 404.5 are required to be included in computing the atrium volume for the design of the smoke control system. As such, if the existing concourse will be completely open to the new lobby, the concourse will be required to be provided

with smoke control as well. As this would be a prohibitive burden on the existing concourse and the meeting room expansion building, either a rated separation between the concourse and new lobby will be required, or the connected spaces will be further studied for a performance based solution that would allow both an open connection and limited impact on the smoke exhaust systems.

- If the existing concourse and new lobby are open to each other, the existing 2 hour separation across the border between expo/meeting space and the concourse area will need to be extended to the lobby. However, the lobby can be open to the safe areas on the meeting room floors per 404.5 since less than four floors will be open to the atrium. If the lobby is open to the meeting room safe areas, the volume of the safe areas must be included in the design calculations for the smoke control system.

Egress Requirements

- 1007.1 Exits from Floors – At least two accessible means of egress shall be provided to each accessible portion of the space.
- 1007.2.1 High Rise – elevator with accessible means of egress required
- 1007.6 Area of rescue assistance – 30"x48" required for each 200 occ. 3200 occ per floor = 16 required for meeting room floor.
- 1013.3 Common path of egress travel – 75' max
- 1015.1 Exit access travel distance (see below per BC table 1024.7)
- 1016.3 Dead end corridor 20' max
- 1014.1.1 Remoteness of Two Exits: In a fully-sprinkler building, the separation distance of the exit doors or exit access doorways shall be not less than one-third of the length of the maximum overall diagonal dimension of the area served measured in a straight line between exit doors or exit access doorways.
- 1014.2.2 Remoteness of three or more Exits: Additional exits shall be arranged in a reasonable distance apart so that if one becomes blocked, the others will be available.
- 1010.1 Minimum number of exits: All rooms and spaces within each story shall be provided with and have access to the minimum number of approved independent exits as required by Table 1018.1 based on the occupant load of such story.
 - 1-500 Occ – 2 exits min
 - 501-1000 Occ – 3 exits min
 - >1000 – 4 exits min

- 1015.1 Max Travel Distance: Per BC table 1015.1, max travel distance for Group B Occupancy is 300 feet (sprinkler). See 1024 Assembly.
- 1024.2 Buildings or spaces occupied by Group A that have an occupant load of greater than 300 shall be provided with a main exit with sufficient width to accommodate at least one half of the occupant ; where the main use or dominant occupancy of the building is classified as Group A, the main exit shall front on at least one street or an unoccupied space of not less than 10 feet in width that adjoins a street or public way; in assembly occupancies where there is no well defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building.
- 1024.7 The maximum primary exit travel distance permitted is 150 feet and the maximum secondary exit travel distance permitted is 250 feet; exit openings satisfying the primary and secondary travel distance requirements for any one seat or location shall be separated from each other by a distance of at least 25 feet
- 1024.8 Common path of travel distance shall not exceed 30 feet
- 1024.17.1 For places of assembly where the net floor area is less than 12 square feet per person, the classification of exits are as follows:
 - Class 1 exit openings that are used for normal entry to the assembly space, and that open directly to a safe area or to an open exterior space
 - Class 2 exit openings that are not used for normal entry to the assembly space, and that open directly to a safe area or to an open exterior space
 - Class 3 exit openings that open from the assembly space into corridors, exit passageways, or vertical exits
- 1024.17.2 For assembly spaces where the mean floor area is more than 15 feet above or below the adjoining grade elevation, the exit capacity shall be distributed as:
 - Class 1 not less than 60 percent
 - Class 3 not more than 40 percent
- 1024.17.3 Safe areas shall comply with the following requirements:
 - The capacity of exits from safe areas shall be provided for all occupants of the safe area
 - When provided to serve Class 1 or Class 2 exit openings, safe areas shall be separated from assembly spaces by noncombustible construction having a two hour fire resistance rating, and shall serve as transition areas in the line and direction of exit travel; they shall serve for normal entry to the assembly space and may be used as corridors, lobbies, or lounges
- No room or space classified in occupancy Group H, S-1, F-1, or F-2 shall open upon a safe area
- Safe areas shall be at a level not more than 6 feet above or below the level at which egress is made from the assembly space
- Ventilating systems for safe areas shall not be connected to systems serving any other spaces, unless separated from such systems by fire/smoke dampers actuated by smoke detectors
- Places of assembly having more than one assembly space may have a collecting safe area that receives the occupant load discharged into it by other safe areas; collecting safe areas shall be located within 6 feet above or below the assembly space nearest to grade
- The occupant load of a safe area shall be the aggregate occupant load of all exit openings discharging directly into it; the occupant load of a collecting safe area shall be the aggregate occupant load of all exit openings discharging directly into it, plus 50 percent of the occupant load of other safe areas discharging into it
- The clear unobstructed floor area of each safe area shall be sufficient to accommodate the total occupant load of the safe area on the basis of 3 square feet per person, not including space occupied by furniture or equipment and with a minimum dimension of 8feet of unobstructed space; the height of safe areas shall be at least 8 feet at all points.
- When a safe area provides egress to an open exterior space, either directly or through a vestibule, the safe area need not provide the floor area required by this section when the level of discharge from the safe area to the open exterior space is not more than 4 feet above or below the grade of the open exterior space
- 1024.17.3.1 Vertical exits leading directly from one safe area to another, or leading from a safe area directly to an open exterior space, need not be enclosed
- 1024.17.3.2 Safe areas shall be artificially lighted by electrical means at all times during occupancy of a place of assembly so as to provide illumination of at least 5 foot candles.

Impact on the Design:

The meeting room levels public corridors will be considered Safe Areas.

It is confirmed that the back of house corridors may be used for exiting on the meeting room levels per 1024.17.1 and 1024.17.2. These corridors shall be considered to be interior corridors as defined by the Code and shall be constructed as fire partitions per

1016.1, however, no hourly fire resistance rating will be needed since the building will be fully sprinkler protected.

- A maximum of 40% of the exit capacity from each meeting room may go into the back of house corridor per 1024.17.2, with at least 60% of the exit capacity required to go into the safe area.
- Since there is not a distinct main entrance for each meeting room, the requirements regarding main exit doors and additional exit doors described in 1024.2 are not applicable.

2.1.7 Architectural Construction Components and Finishes

Exterior Façade Systems – Curtain Wall, Saw Tooth & Glass

GL-1: Pre-function Façade, Ballroom West Façade

Point-supported insulated glass wall system; 5'x10' nominal glass size; glass composition shall be identical to Javits renovation glass façade. Ballroom west façade will have motor controlled solar shade devices.

GL-2: Pre-function Façade

Point-supported insulated glass wall system; 5'x10' nominal glass size with motorized operable panels to function as make-up air intake for atrium smoke exhaust system; glass composition shall be identical to Javits renovation glass façade.

GL-3: Ballroom Saw Tooth with Glazed Clerestory

Top & Bottom Capture with silicon glazed butt joint insulated-glass wall system; 5'x10' nominal glass size; glass composition shall be identical to Javits renovation glass façade. Motor controlled interior solar shading louver devices will be incorporated into clerestory design for operable control of daylight.

GL-4: Pre-Function Skylight

Point-supported insulated glass wall system; 8'x14' nominal glass size (to be verified); glass composition shall be identical to Javits renovation glass façade.

GL-5: Truck Marshalling East Wall and select locations will have single glazed glass channel wall system with CMU backup wall system for tie-back support.

GR-1A (Alternate): Pre-Function Green Roof Option – Saw Tooth with Glazed Clerestory

Point-supported insulated glass wall system; 5'x10' nominal glass size on vertical plane; glass composition shall be identical to Javits renovation glass façade. Lightweight extensive green roof mat, composition shall be identical to Javits renovation green roof.

Exterior Façade Systems – Metal Panels

MP-1: Ballroom Support Space Façade will be unitized stainless steel wall panel system identical to the Javits renovation project stainless steel wall panel system. This wall system will include the removal and reinstallation of the existing stainless steel wall panels that occur on the north facade of the existing building. There are approximately 16,675 SF of existing stainless steel wall panels on the north wall.

Exterior Façade Systems – Glazed Terracotta Rain Screen

TC - Atrium Elevator Exterior Wall, standard glazed terracotta wall panels attached to a rain screen metal clip and track mounting system with insulation and water barrier on CMU wall system.

TC-A (Alternate) – Stair enclosure façade at northwest corner of Twelfth Avenue and West 40th Street, in lieu of channel glass façade in this location, provide alternate price for standard glazed terracotta wall panels attached to a rain screen metal clip and track mounting system with insulation and water barrier on CMU wall system.

Exterior Façade Systems – Truck Marshalling Façade & Transformer Yard Enclosure

MP-2: Unitized stainless steel wall panel system with stiffeners but uninsulated; same size and textures as Javits renovation project stainless steel wall panel system. Panels will be mounted on angle support frames in a varying pattern of undulation tied to structural “T”s.

PC: Precast concrete wall panels at the base of the metal panel wall, concrete to match the color/texture of the existing panels along Twelfth Avenue.

Exterior Façade Systems – Ballroom & Meeting Room Facade

MP-3: Zinc close-joint wall panel system on CMU backup wall.

Roof Systems

Truck Marshalling and Transformer Yard

- The roof area over the Truck Marshalling building will be designed to be a “blue roof” that will retain water for a designated period of time and slowly drain water through control flow drains with weirs. Based on the durability of this roof system, the Transformer Yard platform is proposed to be the same system, although will not be intended to retain water. The roof system proposed is a two component, UV stabilized high performance seamless and self terminating cold fluid applied polyester reinforced solvent free polyurethane membrane system. The membrane will be high reflective and will improve the building energy efficiency and contribute to the reduction of the urban heat island effect. The fully reinforced

165 gram weight polyester fleece membrane system is fully adhered to the substrate and the fleece is saturated into the resin and provides a consistent membrane thickness in its initial application.

- Roof Deck Insulation proposed will be polyisocyanurate (PIC) foam insulation with an overlay of a high compressive strength recover board to permit torch application. Thermal insulation shall meet current requirements of ANSI/ASHRAE / IESNA Standard 90-1. A minimal thermal resistance of greater than R=24 is being planned for the roof assembly.
- The roof area over the Truck Marshalling will have an array of photovoltaic panels secured to a galvanized, painted steel dunnage frame structure raised above the roof covering about 4'-0".
- Above the Transformer Yard roofing system will be a series of precast concrete planter troughs which will span over the utility area and have openings between precast planters. The precast planter troughs will be lined with a hot fluid applied reinforced membrane waterproofing. The planters will have sedum and plant vegetation.
- The green roof vegetation will consist of low growing, drought resistant plant species (sedum and succulents) grown in a lightweight mineral substrate rather than soil. They only require irrigation and light maintenance for the first two (2) years. The system consists of the following components:
 - Root Barrier: a water impermeable, flexible layer below green roof system that serves as protection against root encroachment into underlying roof components.
 - Drainage Mat: A composite material that creates a free flowing space below the vegetated and water retention layers to permit unrestricted movement of excess water to roof drains.
 - Water Retention Fleece: A non- woven fabric material that helps to contain particulate materials and retain water for root uptake and plant use.
 - Pre-Cultivated Vegetation Mat: A thin combination of plant material planting substrate, and synthetic fabric carrier. The Pre-cultivated mats are harvested from the field fully vegetated and delivered to the installation site as sheets or rolls.
 - Growing Medium: A low organic / high mineral composition growing mix composed of porous aggregate, sand and compost.
- For roof areas where intensive planting is anticipated to include shrubs and trees, use an American Hydrotech hot fluid

applied reinforced membrane with drainage mat and root barrier protection.

Roof Systems – Ballroom

- The roof over the Ballroom is configured in a Saw Tooth design and the non glass areas of the sloped roof planes will be covered with a zinc metal single of double standing seam roof system. Zinc is among the most sustainable metals used in construction today and has been on the roofs of Paris for almost 200 years. The material is lightweight and durable, low corrosive, fully recyclable, the design life cycle is over 80 years and virtually maintenance free. Zinc roof panels can be worked into complex shapes and easy fastened to the roof substrate with clips and fasteners. All flashing pieces will be zinc metal and integrated
- Roof Deck Insulation proposed will be polyisocyanurate (PIC) foam insulation with an overlay of a high compressive strength recover board to permit torch application. Thermal insulation shall meet current requirements of ANSI/ASHRAE / IESNA Standard 90-1. A minimal thermal resistance of greater than R=24 is being planned for the roof assembly.

Roof Systems – Event Plaza & RTU Back-Of-House

- Several roof systems were analyzed for this portion of roof area, which will have different roof coverings over the proposed roofing material. A portion of the roof will have CFS certified wood deck and green roof with trees, plants and shrubs. The system that best works with these types of roof covers is a 2 ply modified bitumen membrane system. The 2 ply modified bitumen system consists of base sheet and a cap sheet. The cap sheet shall be reinforced with a non woven polyester mat with a minimum thickness of 154 mils (3.9mm). The cap sheet width shall be 2 meters to minimize side lap construction.
- A 2 ply membrane system provides redundancy (double layer with staggered membrane joints. Both membrane plies are fully adhered via open flame torch or approved liquid adhesives.
- The flashing is to be constructed using a reinforced cold fluid applied (CFA resin membrane (PMMA = poly – methyl-methacrylate). These membranes are field constructed, and are suitable for irregular substrates, and exhibit an extremely high bond to substrate (wood, metal, concrete and glass).
- Roof Deck Insulation proposed will be tapered polyisocyanurate (PIC) foam insulation with an overlay of a high compressive strength recover board to permit torch

application. Thermal insulation shall meet current requirements of ANSI/ASHRAE / IESNA Standard 90-1. A minimal thermal resistance of greater than R=24 is being planned for the roof assembly.

- Green Roof will be an extensive lightweight, green roof that will consist of low growing, drought resistant plant species (sedum and succulents) grown in a lightweight mineral substrate rather than soil. They only require irrigation and light maintenance for the first two (2) years. The system consists of the following components:
 - Root Barrier: a water impermeable, flexible layer below green roof system that serves as protection against root encroachment into underlying roof components.
 - Drainage Mat: A composite material that creates a free flowing space below the vegetated and water retention layers to permit unrestricted movement of excess water to roof drains.
 - Water Retention Fleece: A non- woven fabric material that helps to contain particulate materials and retain water for root uptake and plant use.
 - Pre-Cultivated Vegetation Mat: A thin combination of plant material planting substrate, and synthetic fabric carrier. The Pre-cultivated mats are harvested from the field fully vegetated and delivered to the installation site as sheets or rolls.
 - Growing Medium: A low organic / high mineral composition growing mix composed of porous aggregate, sand and compost.
- Irrigation is necessary during the plant establishment phase (2 years). In order to support mature establishments of the vegetated community, it is highly recommended that periodic irrigation be applied during the hottest months of the 1st and possibly 2nd growing seasons after installation. The method of supplying irrigation may vary with regard to removable or permanent piping, rotary heads or drip irrigation, or other irrigation technologies.
- Concrete Pavers proposed are 2" thick with a compressive strength of 8500 psi and will be located designed area of the Ball Room Plaza. The pavers will be located on areas of the roof that receive frequent roof traffic as they offer substantial protection to the roof membrane.

Roof Leak Monitoring is recommended to be tested for integrity employing the electric field vector mapping method (EFVM). A

leak monitoring system can be integrated with the roof system that alerts to breaches in the roofing membrane.

Raised Floor Construction

To facilitate mechanical and electrical distribution, raised floor systems will be used on Level 4 Meeting Rooms and pre-function area and Level 5 Ballroom and pre-function area. The raised floor shall be rated for heavy duty use with wheel load capacity of 3,000 pounds and impact load of 400 pounds. Concept pricing can be based on Comx CX600 or equivalent, 24" x 24" panels.

Operable Partitions with Pass Doors

Operable partitions shall be incorporated in locations as indicated on the floor plans. Partitions are not required to be fire rated, but where necessary, partitions shall incorporate pass-doors to allow movement through the partition without disengaging the system. Concept pricing can be based on Hufcor or equivalent.

Production Kitchen and Holding Pantries

The Level 5 BOH will contain a new production kitchen of about 6,500SF net, plus a series of food/beverage holding pantries (approximately 8 total) of about 350SF each to service the three levels. Some dry and cold storage will also be provided in the Level 5 BOH. For budget estimating purposes, the equipment and installation for the production kitchen should be allocated at \$175/SF with an additional 40% for MEP connections and provisions. The equipment and installation for the holding pantries should be allocated at \$125/SF with an additional 40% for MEP connections and provisions.

Building Finishes

Refer to Appendix for building finishes schedule.

2.2 GEOTECHNICAL EVALUATION

(Prepared by Langan Engineering, Environmental, Surveying, and Landscape Architecture, DPC)

This section summarizes geotechnical engineering considerations for the design of the contemplated Truck Marshaling and Expo/Meeting Room expansion at the Jacob Javits Convention Center. The following sections provide a brief discussion of geotechnical design considerations for the project and the conditions affecting the design and construction.

All elevations presented herein refer to the Borough President of Manhattan Datum (BPMD) which is 2.75 ft above mean seal level as measured by the United States Coast and Geodetic Survey at Sandy Hook, New Jersey (NGVD 1929).

2.2.1 Proposed Construction

We understand that the proposed construction is anticipated to consist of a northward expansion of the Javits Center to provide additional meeting rooms, exposition space, back of house space, and a new Truck Marshaling Facility. The meetings and exposition space will generally be located between the existing Javits building and the north side of West 39th Street. The Truck Marshaling facility will generally be located in the between West 39th Street and West 40th Street. The proposed expansion is depicted in the architectural concept sketches. The finished floor of the lowest level is anticipated to be at el -12 ft.

2.2.2 General Subsurface Conditions

The general subsurface stratigraphy in the area of the proposed construction consists of fill overlying slightly organic clay and silt, over bedrock. A layer of sandy till is present atop the rock surface, within depressions in the bedrock surface. About two-thirds of the site falls west of the original Hudson River shoreline.

Fill materials are generally comprised of sand with variable concentrations of silt, gravel, boulders, concrete, brick, wood, etc. Available boring data indicates the fill varies from loose to dense. The thickness of the fill materials varies from about 10 to 30 ft, generally increasing in depth from east to west. Boring data, historic maps, and construction observations indicate the presence of substantial obstructions within the fill layer along the west end of the site between West 39th and 40th Streets (i.e. wood cribbing, piles, and rubble).

Slightly organic silts and clays (former Hudson River sediment) are present below the fill layer and generally vary in thickness from about 2 to 25 ft in the vicinity of the proposed structures. The

silt and clay soils are generally soft to very soft with undrained shear strength on the order of about 400 to 600 psf.

A layer of sand/till is present sporadically below the silt and clay soils. Where present, the sand/till soils are typically medium dense to dense with thicknesses varying from about 5 to 10 ft.

Bedrock is present below either the silt and clay or sand/till layers. Bedrock is generally comprised of very hard granite, schist, gneiss, and pegmatite; however, a thin veneer of decomposed rock is located near the bedrock surface in some locations and increased weathering and fracturing is common near transitions in rock type (i.e. schist to granite, granite to pegmatite, etc). The bedrock surface is somewhat irregular, but generally slopes down from east to west. Bedrock surface elevations are estimated to vary from about el 0 ft to el -50 ft in the vicinity of the proposed structures.

Groundwater elevations are expected to vary from about el -2 ft to el 6.5 ft, increasing from west to east. Groundwater levels are expected to be tidally influenced along the west side of the site given the close proximity to the present Hudson River shoreline. In addition, Groundwater levels are likely to fluctuate with seasonal changes and precipitation events, and zones of perched water are likely present at some locations due to the heterogeneous nature of the fill and native soils across the site.

2.2.3 PANYNJ Lincoln Tunnels Facilities

The Port Authority of New York and New Jersey (PANYNJ) Lincoln Tunnel is present below the proposed structures. The Lincoln Tunnel includes three tunnels or "tubes" commonly referred to as the North, South, and Center tubes, and two ventilation buildings referred to as the NY Land Vent and NY South Vent. The North and Center tubes are located beneath the limits of the proposed expansion; the South tube is south of the proposed construction and below the existing Javits building. Ventilation buildings, referred to as the New York Land Vent and New York South Vent, are located in areas outlying the proposed construction; specifically, the NY Land Vent located on Eleventh Avenue east of the development and the NY South Vent is located southwest of the development.

The tunnels are inclined, sloping downward from east to west. The North tube is closest to the ground surface, followed by the Center tube, and finally the South tube. The three tubes were constructed via a combination of mined excavation and cut-and-cover methods. Mined excavation included driving tunnel shields through soil overburden and rock; drilling and blasting was utilized to advance the mined tunnels through rock. Cut and cover sections were installed by creating a "trench" excavated by

conventional means through soil overburden and rock; drilling and blasting was performed where the tunnel falls below the rock line.

From the west, the North tube transitions from mined to cut-and-cover construction at approximately mid-block, between Eleventh and Twelfth Avenues, the Center tube transitions from mined to cut-and-cover construction east of Eleventh Avenue, and the South tube transitions from mined to cut-and-cover construction at the west end of the NY South Vent.

Mined tunnel sections, referred to as "drum ring" sections, consist of an approximately 31 ft diameter circular cast-iron shell lined with concrete. Interior support of drum rings sections includes tensioned tie-bars along the top and bottom of the roadway area. Intake and exhaust air ducts are located above and below the roadway, respectfully.

Cut-and-cover sections, referred to as "bent" sections, consist of roughly rectangular shaped box tunnels with a curved arch invert on the bottom of the rectangular box. The bent sections were constructed using steel framing with a concrete lining. Intake air ducts are located along the bottom of the bent sections, whereas exhaust air ducts are located either on the top or side of the section. The height and width of the bent sections varies depending on the location of exhaust air ducts (i.e. top or sides).

The ventilation buildings extend below grade and connect to the underlying tunnels. Specifically, the NY South Vent building connects to the South tube and the NY Land Vent connects to the Center and North tubes. The ventilation buildings consist of concrete lined steel frames below grade which are founded in rock.

An electrical feeder line runs between the NY Land Vent building and the NY South Vent building. The feeder and the associated easement cross the development area.

2.2.4 Building Code

The we anticipate that proposed expansion will be subject to the requirements of the 2014 New York City Building Code (NYCBC) rather than the New York State Building Code. Provisions of the 2014 NYCBC will affect the design of the new structures with respect to subsurface investigation requirements, seismic classification and design, and structural design of deep foundation elements. A site specific seismic study is anticipated to be required given the relatively poor subsurface conditions within the site.

2.2.5 Subsurface Investigation

A detailed subsurface investigation is both warranted and required for a project of this magnitude in order to adequately evaluate the soil and bedrock conditions. Field investigation methods will likely include borings, test pits, groundwater monitoring wells and piezometers, geophysical methods, etc. In order to limit the

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number of exploration locations, available existing subsurface data will be utilized. We expect that borings performed at the centerline of discrete deep foundation elements (caissons) will be necessary to supplement the available existing data. This will be particularly warranted for caissons located within 25 ft of the Lincoln Tunnel. In addition to the field investigation, an appropriate laboratory testing program will be required to confirm field observations and testing, and further evaluate the engineering properties of the soils and bedrock for design. Specific requirements for the investigations will be developed as the design progresses.

2.2.6 Demolition of Existing Structures

Demolition of the existing Temporary Expo and Link building will be required for the proposed development. These buildings are supported on shallow foundations comprised of reinforced concrete. In some areas, additional unreinforced concrete fill extends to depths of about 2 to 4 ft below the bottom of the footings. The presence of additional concrete fill is most prevalent along the perimeter walls of the Temporary Expo building.

2.2.7 Flood Considerations

The east side of the Javits site is located within FEMA mapped areas of flood hazard. According to the preliminary Flood Insurance Rate Map (FIRM), the site falls within zone AE with a base flood elevation of about el 9.35 ft. The new development will need to be floodproofed in accordance with the 2014 NYCBC and ASCE 24. Considerations will also need to be made for the existing structures on-site considering the continuity with the new construction. We understand that the existing facilities are currently being flood proofed up to el 14.1 ft.

2.2.8 Excavation Considerations

Excavation will be required to install foundations for the proposed development. We expect that excavations south of West 39th Street will generally be limited to about 20 ft or less for installation of pile caps, grade beams, and utilities; these excavations will progress solely through soil. Considerable soil and rock excavation will be required for the Truck Marshaling facility north of West 39th Street. We estimate excavation on the north will extend to depths of about 20 to 30 ft below adjacent grade.

We estimate about 28,000 cubic yards of rock removal and about 140,000 cubic yards of soil removal will be required for the project.

2.2.9 Excavation Support Considerations

Excavation support will be required along the perimeter of the Truck Marshaling facility at the north end of the site. We anticipate that the excavation support will need to provide groundwater cutoff given the anticipated depth of excavation below the groundwater table and to mitigate stress changes on the adjacent Lincoln Tunnel facilities. Sheet piling and drilled-in

interlocking pipe pile (O-piles) systems are considered feasible and most cost effective. We note that pre-excavation or predrilling of the sheet piling alignment may likely be necessary to bypass potential obstructions (i.e. wood, boulders, debris, etc) that may otherwise inhibit installation. The O-pile systems can bypass obstructions more readily considered their use of drilling methods. Secant pile, tangent pile and slurry walls are considered feasible alternatives to provide groundwater cut-off, but are expected to be more expensive.

Tie-backs will be precluded in areas adjacent to the Lincoln Tunnel and may not be feasible on the western half of the site where soil conditions are poor and rock is deeper. Internal bracing (i.e. rakers, cross-lot braces, etc) should be assumed in these areas.

2.2.10 Groundwater Considerations

As indicated earlier, groundwater is present at elevations varying from about el -2 ft to el 6.5 ft. Temporary dewatering will be necessary for excavation of the lowest level of the Truck Marshaling facility. Conventional dewatering techniques such as sumps and pumps and well points are considered viable provided that the SOE system provides groundwater cutoff.

The permanent structure will need to be designed to accommodate hydrostatic pressures as discussed below.

2.2.11 Lincoln Tunnel Considerations

The presence of the Lincoln Tunnel will influence excavation support, groundwater control, and foundation options. We expect considerable coordination and interaction with PANYNJ during design and construction. Monitoring of the tunnel, excavation, and adjacent ground will be likely required during construction.

The east end of the current development scheme may be in conflict with the North Tube and necessitate that elevations in the area be higher.

Existing easements for PANYNJ facilities associated with the Lincoln Tunnel may need to be renegotiated and existing utilities serving the Lincoln tunnel may require relocation.

2.2.12 Monitoring Considerations

Monitoring of the existing tunnels and related structures, and existing buildings and utilities will require monitoring programs to be developed and implemented. The requirements for monitoring will be governed by the controlling agencies (MTA, PANYNJ, etc.) and engineering judgment. Monitoring will likely include precondition surveys, optical surveys, piezometers, inclinometers, strain gages, tiltmeters, crack gages, etc. The duration of monitoring will vary, but is likely to extend from a period prior to construction until foundation construction has been completed.

2.2.13 Foundation Considerations

As indicated above, foundation options will be influenced by the presence of groundwater and the Lincoln Tunnel. Also, the type of foundations will be influenced by the depth of the excavation required.

We expect that drilled caissons will likely be required for support given that portions of the structure will have to span the Center and North tubes of the Lincoln Tunnel. A mat foundation or footings can be used in areas north of the Lincoln tunnel where rock is shallow and load can be shed below the influence line of the tunnel.

Driven piles may be feasible in the area north of West 39th Street, but such feasibility will ultimately depend on design load requirements and proximity of the foundations to the North tube of the Lincoln Tunnel. We feel that caissons represent a worst case from a cost perspective where a mat foundation cannot be accommodated and as such should be carried in pricing exercises.

Caissons located near tunnels bedded in rock will require bond breakers to transfer load below the invert of the adjacent tunnel. We have assumed a theoretic influence line extending upward at an inclination of 1H:1V from the tunnel invert to establish the need for bond breakers and to estimate bond breaker lengths.

Walls and floor slabs will have to be designed to account for hydrostatic pressures if installed below the flood plain (el 14.1 ft). Structural floor slabs will be required regardless of excavation depth; however, deeper excavations will necessitate much more robust slabs and walls to resist hydrostatic pressure.

Means of providing uplift resistance will be necessary for floor slabs installed below groundwater or the design flood elevation. Tie-down anchors, caissons and piles are expected to be feasible north of West 39th Street and areas located between South and Center tubes of the Lincoln Tunnel. Areas overlying the North and Center tube will likely have to span significant distances and be restrained by caissons.

2.2.14 Additional Studies

Additional studies will be required during design development related to proposed foundation systems. Specific requirements will depend ultimately on the final design scheme proposed and requirements of PANYNJ. We expect that additional studies may include the following:

- Axial and Lateral Capacity of Foundations
- Modeling of Mat Foundations
- Rock Stability Analysis for Excavations
- Temporary Excavation Support Design
- Finite Element Method (FEM) modeling
- Lincoln Tunnel Impacts

- Site Specific Seismic Analysis

2.2.15 Excavation Quantities

Soil Excavation Volume (South of W 39th Street): 40,000 CY

Soil Excavation Volume (North of W 39th Street): 100,000 CY

Rock Excavation Volume: 28,000 CY

2.2.16 Caissons

Typical caisson details are illustrated in the attached sketches GSK-1 through GSK-4. Refer to the attached sketch GSK-10 and schedule for estimated caisson quantities.

Refer to sketch GSK-005 for typical details pertaining to tension mini-caissons which are contemplated at the center of each column bay. Refer to attached sketch GSK-11 and schedule for estimated quantities.

2.2.17 Support of Excavation

Refer to sketches GSK-6 through GSK-9 for details and quantities pertaining to support of excavation. Support of excavation south of West 39th Street is anticipated to be limited to installation of pile caps and grade beams. These systems are likely to include timber sheeting and short sheet piling segments (<20ft long). The remainder of the area is assumed to be open cut using OSHA compliant slopes where excavating below adjacent grade.

2.3 SITE / CIVIL WORKS EVALUATION

(Prepared by Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.)

This section summarizes site / civil engineering considerations for the design of the Javits Marshaling Building Concept. Our evaluation is based on review of available concept plans from the project architect (Javits II Architecture, "J2A"), and the project survey, prepared by Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. (Langan). The subsections below briefly discuss the following:

- Site Location
- Easements
- Easement Conflicts
- Utility Work
- Twelfth Avenue Scope
- Site Drainage
- Street Tree Requirements
- Traffic Analysis
- Recommendations

2.3.1 Site Location

The existing main Javits site (Block 680 Lot 1) is bound by the former (closed to traffic) West 39th Street to the north, West 34th Street to the south, Eleventh Avenue to the east, and Twelfth Avenue (NYS Route 9A) to the west. The Marshaling Building site is located one block north, between the former West 39th Street and West 40th Street, limited to the east by the existing NYPD lot (Block 685 Lot 38). The first floor of the Marshaling Building will extend south across the former West 39th Street into the site of the former tent building on the main Javits site.

2.3.2 Easements

There exist numerous easements on-site, between the Empire State Development Corporation (ESDC) and various entities, including but not limited to the Metropolitan Transportation Authority (MTA) and the Port Authority of New York and New Jersey (PANYNJ).

- Existing MTA Easements

In support of the construction of the Number 7 subway line extension project, there are temporary easements to the Hudson Yards Development Corporation (HYDC) located along the east side of the Javits site and the 33-34 block

(adjacent to Eleventh Avenue). These easements extend the length of the properties in the north-south direction and vary in east-west width from 5-feet to 15-feet. We do not anticipate any impact from these easements on the proposed work.

- Existing PANYNJ Easements

PANYNJ holds a number of existing easements on the main Javits site related to Lincoln Tunnel (LT) infrastructure. In addition to these recorded easements, PANYNJ previously verbally requested a minimum 30-ft offset from their above-ground vent structures to any constructed Javits structure. Particular easements of concern with respect to the proposed work are generally described as follows (refer to the Langan Boundary & Topographic Survey or a current title report for more information):

- The New York Land Vent South (NYLVS) is located on the former West 38th Street right-of-way at Twelfth Avenue. Easements exist for the maintenance of and access to that building and its utility services. PANYNJ must be provided suitable access to the vent at all times including during construction and in the final build-out. PANYNJ has expressed their preference of an access point completely independent of Javits operations (i.e. PANYNJ does not want access through Javits buildings).
- The New York Land Vent is located at the northeast corner of the Javits site, on a separate tax lot. Easements exist for the maintenance of and access to that building on its west and south sides; the north side has no known easements because it was formerly a public right-of-way; but one is assumed to be needed.
- An electric feeder duct bank runs between the two aforementioned vent buildings. This infrastructure is critical to the operation of the vent buildings and is protected by an easement running generally east-west across the site formerly occupied by the Javits tent building.

The Lincoln Tunnel North Tube (LTNT) exists below the bed of the former West 39th Street. No easement exists today, as the street has not yet been demapped. Should the street be demapped in the future, an easement will

need to be created, similar to those existing for the center and south tubes.

2.3.2.1 Easement Conflicts

Based on the conceptual plans for the Marshaling Building, we identified a number of locations where the proposed construction falls within an existing easement.

- The proposed egress hallway on the north side of the main Javits building conflicts with existing easements A, B, and D (refer to Langan's survey for more information).
- The main entrance (east side) of the new building encroaches on existing easement B (refer to Langan's survey for more information).
- The entire building straddles an existing PANYNJ electric feeder cable ductbank and manholes. This infrastructure is within easement A (refer to Langan's survey for more information). Previous discussions with PANYNJ resulted in a request for a 40-ft diameter clear zone, centered on each feeder manhole lid, for access to maintain the manholes, pull new cables as needed, etc. Refer to section 2.3.3 below for a proposed re-routing of this ductbank, subject to PANYNJ review and approval.
- The closing of West 39th Street to all traffic will require that a new easement be created to provide access to the NYLVS structure, as the existing easement F extends only to West 39th Street.

2.3.3 Utility Work

The former West 39th Street right-of-way carries major utilities in an east-west direction, connecting Eleventh and Twelfth Avenues. In letters dated September 2006, ESDC informed Con Edison, Empire City Subway, NYC DEP, PANYNJ, RCN, Sprint, TCC, Teleport, and Time Warner of the intent to occupy the bed of West 39th Street in this area, and requested that utility lines "be rerouted to another location." To date, we understand the only relocation is the Con Edison gas main which was moved to West 40th Street.

NYC DEP has created a new planning document for the entire Hudson Yards area (Amended Drainage Plan) which shows the West 39th Street sewer to remain, with plans to upsize it in the future. Note: Amended Drainage Plans are planning documents for NYC DEP; they do not relate to any particular construction schedule. Recent conversations with NYC DEP indicate that they will not allow the sewer to exist beneath any structure. The Lincoln Tunnel North Tube to the north and the Amtrak tunnel prevent re-

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routing this sewer by gravity. A force main may be required, or there will need to be a legal instrument created between the city and state to allow the sewer to be rebuilt within the proposed expansion. The structural and architectural designs will need to reflect the location of the sewer, and any required NYC DEP access.

Langan received approval from NYC DEP and FDNY on NYC DEP application RWM-003/07 (dated 3/26/07) to decommission the existing 20-inch water main in West 39th Street between Eleventh and Twelfth Avenues, and upsize the existing 12-inch water main in West 40th Street to 20-inches; however, this plan was never executed and approval expired in March 2009. A new application needs to be resubmitted for review and approval by NYC DEP and FDNY.

We recommend that all Con-Edison electric service that does not serve the Javits Center be removed from West 39th Street and relocated to West 40th Street. All Javits electric services that run on West 39th Street will enter the expansion near 11th Avenue, and will be routed below-grade on-site to the proposed transformer yard to be designed by the MEP Engineer. Preliminarily, the northern service on West 39th Street may remain in its current location. The southern service will need to be rebuilt from 11th Avenue to the transformer yard to avoid structural conflicts. The 12th Avenue feeder will need to be rebuilt from 12th Avenue to a new manhole to avoid structural conflicts.

There is approximately 600-ft of electrical duct bank between the New York Land Vent (NYLV) and New York Land Vent South (NYLVS) buildings. As previously discussed, this utility is protected by an existing easement. We propose to build a new duct bank along the south side of the Lincoln Tunnel North Tube in the former West 39th Street to replace the existing feeders. Refer to CSK-04. Access will need to be maintained at all manhole structures, and a new easement will be required between the state and the Port Authority. Record information related to the ductbank and manholes indicates the following:

- 9 x 4-inch heavy duty hot dipped galvanized conduits, concrete-encased (approx. 30-in wide x 24-in high)
- 2 x 5KV (single conductor) 3-1/C #4/0
- 2 x 15KV (three conductors) 1-3/C #4/0
- 1 x 2 sets of 12/C wires
- 4 x spares
- ½-inch thick steel plate over ductbank (30-inches wide)

- Manhole inner dimensions 11'-6"L x 5'-0"W x 7'-4"H
- Minimum 24-in cover throughout length of ductbank

Telecom conduits run in West 39th Street and are routed through the Lincoln Tunnel into New Jersey. We recommend that the facilities are relocated to West 40th Street and enter the Lincoln Tunnel at a new points-of-entry under 12th Avenue west of West 39th Street and under 11th Avenue east of West 39th Street. Refer to CSK-02. Alternatively, the duct banks could be relocated to West 40th Street and enter the western end of West 39th Street to maintain the existing point-of-entry into the Lincoln Tunnel North Tube. Refer to CSK-03. This option would minimize the amount of private infrastructure on Javits property, while maintaining the LTNT point of entry.

Based on work previously performed for Javits North in this area, bedrock is anticipated to be encountered at relatively shallow depths and should be considered in pricing utility relocations.

2.3.4 Twelfth Avenue Scope

By installing curbing across West 39th Street at Twelfth Avenue, we assume utility and surface improvements will be required on Twelfth Avenue. This scope could include:

- Installation of new catch basin(s) in Twelfth Avenue.
- Re-pitching of Twelfth Avenue pavement to remove the intersection grading.
- Permanent closure of southbound left turn lane at West 39th Street.
- Removal of bulb-out on southeast corner of intersection to provide continuous parking / queuing lane for trucks on the east side of Twelfth Avenue, as currently exists from West 34th Street.
- Removal of tee (existing water main branch) and installation of new straight pipe at West 39th Street.
- Installation of new tee (water main branch) on 12th Avenue water main at West 40th Street.

2.3.5 Site Drainage

An existing site storm sewer, which begins under the Crystal Palace, then runs north under the inner roadway, and turns west through the former tent building site, will need to be relocated as part of this work. Based on existing elevations, it may need to be pumped from the east side of Javits to the west, as the invert elevations would be in conflict with the lowest level of egress.

The Marshaling Building will be subject to the stormwater detention requirements of the New York City Department of Environmental Protection at any new connection points to a city sewer. Stormwater detention must be employed at an elevation above the downstream street sewer, or pumps will be required. The expansion will require approximately 45,000 cubic feet of stormwater detention. This is subject to DEP review and approval. A combination of rooftop detention, green roof, structured vaults and rainwater re-use can help to decrease the required volume. The New York City Building Code allows for up to 3-inches of roof detention, which would be beneficial in this situation given the proposed large roof area. Credit is also given for stormwater stored in green roofs and under pedestal pavers.

During design, we will study multiple possibilities for new storm connections, including:

- Re-use of existing storm sewer crossing the site, which outfalls to the Hudson River (no detention anticipated to be required; potential NYS DEC permitting).
- New connection(s) to West 40th Street combined sewer with appropriate detention volumes.
- New connection(s) to Eleventh Avenue combined sewer with appropriate detention volumes.
- New connection(s) to combines sewer traversing site, if not relocated.
- New connection(s) to Twelfth Avenue combined sewer, whether existing or upgraded by this project.

2.3.6 Street Tree Requirements

On 30 April 2008, the New York City Department of City Planning (NYC DCP) adopted revised zoning text related to street tree plantings. The New York City Department of Buildings (NYC DOB) followed suit and created two new required items that automatically apply to New Building, Alteration 1 and Alteration 2 applications. NYC DOB form ST-1 calculates the required number of street trees for a property based on frontage. The New York City Department of Parks and Recreation (NYC DPR) enforces the planting / fund payment / waiver requirement via approval of plans and final construction.

When projects are filed at NYC DOB, they are associated with a tax block and lot, and the frontage dimensions dictate the number of trees required. Deductions are made for existing trees, and the result is the number of trees required to be planted or paid for (to the NYC DPR Street Tree Fund).

Any required tree removals will need to be approved by NYC DPR, and restitution based on the existing tree size will be required to be paid, or additional street trees can be planted near the site. See CSK-01 for additional information.

2.3.7 Traffic Analysis

The movement of trucks within the proposed expansion, entering, exiting requires extensive analysis. Our basis for design is to provide 2 feet clear from truck movements as generated by Transoft AutoTurn software to structural columns (design vehicle AASHTO US2011 WB-67). To provide adequate clearance for truck movements, column transfers will be required; further coordination with the structural engineer during the design process will be needed. Column protection should be detailed by the architect and structural engineer, and the dimension of any protection should be kept to a minimum. All truck movements require additional review based on ongoing coordination with the design team and CCOC.

After review of the architectural plans provided by J2A, 6 individual scales should be provided for trucks entering the facility. A total of 5 scales should be provided at the weight station preceding the queuing lanes at Level 1. One scale should be provided before the ramp at the northern edge of the building.

The current plan proposes that trucks exit the building on West 40th Street. The proposed curb cut would need to be about 50 feet wide. This exceeds the maximum length of curb cuts and will require review and approval by NYC DOT. It is likely that, if approved, an audible and visual warning system will need to be installed at the exit to alert pedestrians to oncoming traffic. In addition, the walls of the structure should be as transparent as possible in this area to allow for clear sight lines (i.e. fencing, mesh, or similar).

2.3.8 Recommendations

- Meetings with PANYNJ should be held as soon as further design is authorized to confirm their requirements and clarify any easement terms as early as possible. Discussions should specifically address the potential relocation of the feeder between vent buildings, required clearance between proposed construction and the LTNT, etc.
- Meetings with utility companies should be held prior to design to confirm that sufficient capacity exists to serve the new building, and to discuss the prior legal direction to vacate West 39th Street.

- Proposed work on Twelfth Avenue will require interaction with the New York State Department of Transportation (NYS DOT), as Twelfth Avenue is also a state highway (Route 9A). From previous studies, we understand that work within the Twelfth Avenue right-of-way is difficult / expensive and subject to strict time constraints by NYS DOT. We recommend starting coordination with NYS DOT as soon as design has commenced.

2.4 STRUCTURAL CONCEPTS

The proposed expansion of the Javits Convention Center consists of new expo, meeting room, and ballroom space along with adjacent truck marshalling to be constructed from the northern edge of the existing Javits at 38th Street to 40th Street between 11th and 12th Avenues. The new structures will be separated from the existing Javits to the south by expansion joints.

The new building itself will consist of two structures separated by internal expansion joints. The expo, meeting room, and ballroom spaces along with corresponding pre-function, back of house and MEP spaces will be located in one structure from 38th Street to approximately 39th Street. The truck marshalling building will be adjacent to the north of the expo-meeting room structure and continue to 40th Street.

Structural concept level plans of the major floors along with an overall east-west section are provided. In addition, key sections of typical major girders and columns are included in the drawings to show their character.

The expo-meeting room building extends the existing Level 3 (el. 32'-0") Expo floor northward to 39th St. Above that there will be a level of convertible meeting rooms with a ballroom level above. Above Level 3 will be long span structures over the Expo that support the meeting rooms, ballroom, and roofs. Below Level 3, will be a grade Level 1 loading dock and trailer marshalling floor slab that varies in elevation.

The marshalling building consists of a four story structure with one basement. The marshalling facility begins with access from existing 12th Avenue at approximately el. 8'-0". Scissor circulation ramps at 40th Street provides truck access to the levels. The structure is to consist of long span structural steel framing with bay sizes ranging from approximately 40'-0" to 60'-0". Long spans are required due to truck movements and turns but columns have been strategically located to limit them. The el 28'-0" floor contains loading docks on its south side that serve the extended expo. The expansion joint between the two buildings is located here. The roof of truck marshalling is to support solar arrays, MEP equipment, and a green roof.

2.4.1 Structural Quantity Information for Costing

The structural concept drawings contain information about major structural systems for the purposes of concept level pricing. The nature and layout of the structure is shown in a typical manner. In addition, typical quantities for steel floor framing, concrete floor framing, major trusses and long span girders, columns, bracing,

and major foundation walls are included in the drawings. This narrative is intended only to supplement the system depiction and quantity information provided.

2.4.2 Structural Design Criteria

The new Javits expansion structures will be designed to the 2014 Building Code of the City of New York. It is recommended that a seismic site specific study, in accordance with the 2014 Code, be conducted to more accurately determine the site class and seismic loading for the expansion building as the soil type varies widely across the site and such a study will likely reduce the seismic loading from that of the Building Code.

2.4.2 Expo-Meeting Room Building Structure

Column Setting Out

Potential spans over the Expo level are based on Expo requirements as well as column/foundation restrictions arising from the underground PANYNJ Lincoln Tunnel tubes that cross the site. Longer spans between columns in an Expo space have always been desirable from a programming standpoint, as known from earlier Javits expansion design studies, where spans of 90 feet, 180 feet, and greater were analyzed. The proposed 150 feet major span in the north-south direction is organized to allow the major columns and foundations supporting the meeting room-ballroom stack to avoid the tunnels below. In the east-west direction, megacolumns supporting the long spans are located every 45 feet, which is a module that works both with the expo and meeting room space planning.

After further study, it was found advantageous to cantilever the southern edge of the new prefunction spaces instead of supporting them with columns that needle through the existing Javits space frame. Continuing the Expo long span structure south over the existing roof avoids complication with having to modify the space frame. This cantilever condition is also structurally advantageous because it reduces the total midspan bending moment to be resisted and the amount of structural material needed for the 150 feet long span.

At the north end of the long span, within the back-of-house bar, only one column line need be transferred over a tunnel tube.

Long Span Structure

The use of a concrete structure over the new expo space and tunnels with its ability to create a clean exposed soffit without fireproofing is proposed. Major post-tensioned concrete girders on the 45 feet module would support standard precast double

tees. For simplicity, these girders would support the level of the ballroom above with simple light posted framing, such as in steel but may alternatively be done in standard precast.

Post-tensioning allows for efficiency and deflection control through load balancing. While these girders could be completely cast-in-place with formwork, these spans lend themselves to precast segmental bridge girder technology. Segments that are 50 feet long could be more easily transported and erected on shoring towers. The Level 3 Expo construction could be used as a staging platform for this work. Bridge segmental approaches typically involve some amount of cast-in-place topping and infill to tie the precast segments together transversely. Going forward, the extent of the precast to cast-in-place can be studied further. For instance, the pre-cast could actually be organized to act more as a form to allow for easier erection and then pumped cast-in-place is maximized.

The long span roof over the ballroom contains a saw tooth profile with opaque roof surfaces on the slope and some glazing on the vertical. This provides an opportunity to locate efficient deep structure below the glazing on the vertical. Steel plate or concrete girders are organized on the 45 feet spaced saw tooth.

The long span structure, and framing between, will support a hang point system for the Expo space below. This system will be designed to also accommodate moveable partition supports. In addition, there will be miscellaneous steel to support the moveable meeting room and ballroom partitions on those levels.

Level 3 Structure

To support the Expo loading of Level 3, columns in addition to those extending up to the long span structure will be provided below Level 3. These columns are coordinated with the new Level 1 loading dock and trailer parking, as well as the PANYNJ tunnels. Based on a study conducted, it was determined to be more efficient to provide a longer span truss at Level 3 to avoid the middle tunnel tube than to provide shorter Level 3 spans with transfers in the ground just above the tunnel. Accordingly, the Level 3 floor framing will consist of structural steel trusses and plate girders. Slab on deck and rolled filler beams will frame between the girders and trusses. A topping slab above the slab on deck is planned to accommodate Expo floor ports and distribution on Level 3.

Entry Pavilion/Pre-function and Roof

The Entry Pavilion and Pre-function structure at the east side of the new expansion will be framed in structural steel to accommodate the various long spans and cantilever conditions associated with the escalator systems. The Pre-function spaces to the south will be framed as an extension of the meeting room-

ballroom stack structure, concrete at Level 4 and steel or precast concrete at Level 5.

The roof over these spaces will consist of a saw tooth system with potential green roof on the inclined faces and glazing on the vertical faces. The main architecturally exposed roof structure will be organized to be within the vertical faces coordinated with the glazing and maintenance catwalk systems.

The southeast and south facades of these spaces will contain architecturally exposed structural steel vertical and horizontal members to support the façade glazing.

Level 1 Structure and Foundations

The majority of the columns in the expansion will be supported by drilled caissons extending down to rock. See the Geotechnical recommendations. At the eastern end of the site, either drilled piers or footings on rock will likely be used. The floor structure at grade will consist of a structural flat slab spanning between foundations to resist gravity loads as well as hydrostatic and flood uplift pressures. Intermediate mini caissons will be used between columns to reduce the span of the slab system, however, it is possible that existing caissons could be utilized to support this structure where present.

Based on previous discussions with the PANYNJ, foundations and caissons are planned to be located 9'-6 feet minimum clear of the tunnels. In addition, foundations and below grade work will need to be coordinated with utilities.

Lateral Load Resisting Systems

In the north-south direction, the megacolumns in combination with the long span structure of the meeting rooms and high roof naturally form a strong verendeel system to resist wind and seismic loading.

In the east-west direction, there will be braced frames organized within the back-of-house and vertical circulation cores. The lateral load resisting system will likely consist of supplemental braced frames in both the east-west and north-south directions that are organized within the vertical circulation zones throughout the new building.

2.4.3 Truck Marshalling Building Structure

Column Setting Out

For the truck marshalling facility, the location of the structural column grid is informed by the truck turning layouts, by proximity to the existing northern Lincoln Tunnel tube, and by the number of trucks that can be parked on each floor. Based on numerous

previous studies, it was determined that, to fit the required number of trucks into the facility and given the constraining north-south dimension of the building, angled truck parking is most advantageous. Structural bays range from approximately 40'-0 to 60'-0 with some specific bays with larger spans near the ramp entrance and terminus areas.

To efficiently support the large truck loads, columns consist of composite concrete encasing W14 steel wide flange columns.

Structural Framing

The longer span girders will consist of W40 or plate girder sections while infill framing will consist of W24 and W27 sections. As used in previous Truck Marshalling designs a 6" normal-weight concrete slab over 3" galvanized stay-in-place corrugated bridge decking (by Canam, Bridge Deck Solutions and the like) will be the typical floor system to resist truck wheel loading. At entrances and the ramps, we recommend that a traffic bearing wearing surface be used for protection from road salt and chlorides at these heavy traffic areas. In addition, there will be an upturned structure around the façade perimeter that acts as a bumper to prevent trucks accidentally driving off the floor. The roof of Truck Marshalling will be of similar construction as the floors below to support the solar panels, MEP equipment, and green roof areas.

Basement Level and Foundations

The majority of the columns in the expansion will be supported by drilled caissons extending down to rock. See the Geotechnical recommendations. Near the east side of the site, either drilled piers or footings on rock will likely be used. The below grade level structure at el. -12'-0 will consist of a structural flat slab spanning between foundations to resist gravity loads and hydrostatic and flood uplift pressures. Intermediate mini caissons will be used between columns to reduce the span of the slab system.

Based on previous discussions with the PANYNJ, foundations and caissons are planned to be located 9'-6 feet minimum clear of the tunnels. In addition, foundations and below grade work will need to be coordinated with utilities.

Near the east side of the site, the north tunnel tube elevation is such that the tunnel will be exposed for a portion of the site and will require protective measures, such as concrete walls to protect the exposed portions of the tunnels. This structure must comply with PANYNJ requirements.

Lateral Load Resisting Systems

The lateral load resisting system will likely consist of supplemental braced frames and moment frames in both the east-west and north-south directions that are organized within the vertical

circulation zones throughout the new building, and along the perimeter of the truck marshalling structure.

2.5 MEP & FP DESIGN

(Prepared by WSP)

The following description of MEP/FP systems for the Jacob Javits Convention Center and new Meeting Room Expansion Building is based on the following areas:-

The Expo Expansion

	Areas (Sq.Ft)
Level 3	160,000
Level 3 Upper Mez	35,000
Level 04	138,000
Level 05	138,000
Totals	497,700

The new Truck Marshaling Facility

	Areas (Sq.Ft)				Total
	Floor	Ramps	Core	Docks	
Level 00A	116,040	3,640	5,370	-	125,050
Level 01A	132,990	8,350	4,960	-	146,300
Level 03	117,270	9,220	5,330	12,320	144,140
Level 04A	131,400	3,705	5,330	-	140,435
Totals	497,700	24,915	20,990	12,320	555,925

The Expo expansion will be constructed on the north side of the existing building on the 39th and 40th Street site between 11th and 12th Avenues. The building mechanical systems will require:

- Fundamental commissioning
- Minimum energy performance guidelines
- CFC reduction
- Optimized HVAC Energy Performance
- Energy Use, Measurement, and Payment Accountability
- Outside Air Delivery Monitoring
- Construction IAQ Management Plan During Construction

2.5.1 HEATING, VENTILATION AND AIR CONDITIONING

2.5.1.1 General

A. The heating, ventilation and air conditioning systems will be designed in accordance with the latest mandates of the 2014 New York City Building Code, but with design performance options as outlined in the New York State Building Code (e.g. smoke protected assembly), as well as with NFPA, Life Safety Codes, ASHRAE, IES, and other industry engineering standards as referenced by code or represents best practice.

B. All heating, ventilation and air conditioning work will include all materials, equipment, labor and miscellaneous appurtenances to provide a complete installation of all system functions indicated herein.

2.5.1.2 Design Criteria

Provide building heating, ventilating and air conditioning systems with capacities to maintain the following inside design conditions at stated outside design conditions.

A. Outdoor Design Conditions

Winter	13°F (DB) 15 mph wind
Summer	89°F (DB) 73°F (WB)

Based on the NYS Energy Conservation Code

B. Indoor Design Conditions

Space Type	Summer (± 2 °F / ± 5% RH)	Winter (± 2° F)
Exhibition Areas	75°F / 50% RH	72°F, No Humidity Control
Registration Areas	78°F / 50% RH	68°F, No Humidity Control
Pre-function Areas	78°F / 50% RH	68°F, No Humidity Control
Meeting Rooms	75°F / 50% RH	72°F, No Humidity Control
Atrium	78°F / 50% RH	68°F, No Humidity Control
Corridor Areas	78°F / 50% RH	68°F, No Humidity Control
BOH / Storage Areas	80°F / 50% RH	60°F, No Humidity Control
Electrical Service Rooms	85°F	60°F, No Humidity Control
Elevator Machine Rooms	80°F / 50% RH	50°F, No Humidity Control

MER'S	85°F	60°F, No Humidity Control
Driver Rest Areas	75°F / 50% RH	72°F, No Humidity Control
Trailer Storage Areas	Ventilation Only (Ambient +)	Ventilation Only (Ambient+)
Trailer Parking Areas	Ventilation Only (Ambient +)	Ventilation Only (Ambient+)
Loading Docks	Ventilation Only (Ambient +)	Ventilation Only (Ambient+)

C. Building Envelop

The building envelop of the Meeting Room/Expo building will prescriptively comply with the requirements of the New York State Energy Conservation Construction Code as required.

D. Internal Cooling Loads

Space Type	Power Density (W/ SF.)		Occupancy (SF./ Person)
	Light	Power	
Exhibition Areas	3.0	8.0	45*
Registration Areas	2.5	0.5	45*
Pre-function Areas	2.5	0.5	45*
Atrium			TBD
Meeting Rooms	2.5	3.0	45*
Audio Visual, Media and Support Facilities	2.0	15.0	200
Computer LAN	2.0	35.0	200
BOH / Storage	0.8	0.5	N/A
Driver Rest Areas	1.5	2.0	20
BOH / Storage	0.8	0.5	N/A

*ASHRAE – HVAC Applications - convention and exhibition centers

E. Outside Air Ventilation

Outside air will meet or exceed the requirements of ASHRAE Standard 62-2014 and will not be less than prescribed by the New York City Building Code Ventilation Index. All assembly and office areas (spaces with significant occupancy and high design outside air rates) will be provided with controls to automatically optimize air quantities based upon measured indoor air quality (Demand Controlled Ventilation). Design minimum ventilation rates will generally be as follows:

Space Type	Ventilation Rate
Exhibition Areas	15 CFM / Person**
Registration Areas	15 CFM / Person**
Pre-function Areas	15 CFM / Person**

2.0 Expansion Concept Design

Meeting Rooms	15 CFM / Person**
Driver Rest Areas	15 CFM / Person
Corridor Areas	0.05 CFM / SF
BOH / Storage Areas	0.15 CFM / SF
Trailer Storage / Parking Areas	0.75 CFM / SF
Loading Docks	0.75 CFM / SF
Elevators	1.0 CFM / SF of transfer air
Electrical Service Rooms	N/A
Elevator Machine Room	N/A

F. Noise Criteria

The noise criteria set herein will be confirmed by Acoustical Consultant.

Space Type	NC (± 2)
Exhibition Areas	45
Registration Areas	40
Pre-function Areas	40
Meeting Rooms	35
Public Circulation	40
Trailer Storage / Parking Areas / Loading Docks	45

G. Filtration Criteria

This criterion is based on the entire building as non-smoking.

1. All Central Air Handling Systems
 - i. 4" deep, 30% efficient (MERV 8 – ASHRAE Standard 52.2) pleated pre-filter.
 - ii. 12" deep, 85% efficient (MERV 13) main cartridge filter.
2. Local Recirculating Systems
 - i. 2" deep, 30% efficient (MERV 8 – ASHRAE Standard 52.2) filter.

H. Thermal Zoning

1. Zoning for control of thermal environments will be provided as follows:

Exhibition Halls	Control per exhibition hall.
Pre-function Areas	Control by floor and solar orientation with some limited area definition (e.g. registration).
Meeting Rooms	Individual Variable Air Volume terminal devices (VAV boxes) per meeting room with reheat.

General	VAV box maximum airflow of 2,000 CFM. Perimeter 15 ft. zoned separately from adjacent interior space. All perimeter corners with glazing on more than one façade.
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2.5.1.3 Description of Systems

A. Air Conditioning

1. The Expo hall areas will be served by (5) roof-mounted 115 ton unitary air-cooled DX units with electric heat. The unit operation will be variable air volume. Each unit will have 100% air-side economizer with enthalpy sensing and DDC controls. Return air will be via ceiling mounted return registers. The units will be capable of smoke purge. The units will be equipped with unit mounted smoke detectors in the supply and return sections of the unit.
2. Meeting room: The meeting rooms will be provided with a floor displacement system and will be served by (4) roof-mounted 70 ton unitary air-cooled DX units with electric heat. Conditioned supply air will be delivered to the space via a variable air volume system including medium pressure ductwork up to the VAV terminal unit. The variable volume controllers will be controlled automatically through the BMS DDC system. Each zone will have DDC temperature sensors. VAV operation will be controlled by the BMS in response to the information provided by the space temperature sensors. Distribution ductwork after the variable air volume box will be low pressure and will terminate with floor or low level mounted supply grilles. Return air will be ducted back to the unit via low pressure ductwork and ceiling return registers. The units will be capable of smoke purge. The units will be equipped with unit mounted smoke detectors in the supply and return sections of the unit.
3. The Meeting room Pre-function space will also be provided with a floor displacement system and will be served as part of the meeting rooms so that diversity of occupancy between the meeting rooms and pre-function space can be taken account of to minimize energy and equipment size. The 4 roof mounted units referred to above have capacity to serve meeting rooms and pre-function space.
4. Ballroom: The Ballroom will be provided with a floor displacement system and will be served by (4) roof-mounted 120 ton unitary air-cooled DX units with electric heat. Conditioned supply air will be delivered to the space via a variable air volume system including medium pressure ductwork up to the VAV terminal unit. The variable volume controllers will be controlled automatically through the BMS DDC system. Each zone will have DDC temperature sensors. VAV operation will be controlled by the BMS in response to the information provided by the space temperature sensors. Distribution ductwork after the variable air volume box will be low pressure and will terminate with floor or low level mounted supply grilles. Return air will be ducted back to the unit via low pressure ductwork and ceiling return registers. The units will be capable of smoke purge. The units will be equipped with unit mounted smoke detectors in the supply and return sections of the unit.
5. The Ballroom Pre-function space will also be provided with a floor displacement system and will be served as part of the ballroom so that diversity of occupancy between the ballroom and pre-function space can be taken account of to minimize energy and equipment size. The 4 roof mounted units referred to above have capacity to serve meeting rooms and pre-function space.
6. The Atrium will be provided with conditioned supply air from the systems serving each of the floors. Supply air will serve the Atrium landings of each of the floors.
7. Back of House Spaces: All BOH spaces on levels 3, 4 and 5 will be provided with a variable air volume system and served by (2) roof-mounted 75 ton unitary air-cooled DX units with electric heat. Conditioned supply air will be delivered to the space via a variable air volume system including medium pressure ductwork up to the VAV terminal unit. Each space will be provided with a VAV terminal. The variable volume controllers will be controlled automatically through the BMS DDC system. Each zone/room will have DDC temperature sensors. VAV operation will be controlled by the BMS in response to the information provided by the space temperature sensors. Distribution ductwork after the variable air volume box will be low pressure and will terminate with floor or low level mounted supply grilles. Return air will be ducted back to the unit via low pressure ductwork and ceiling return registers. The units will be capable of smoke purge. The units will be equipped with unit mounted smoke detectors in the supply and return sections of the unit.
8. The existing air handling units, already earmarked to be replaced as part of the current renovation AHU-10S-16 to AHU-10S-19 will be relocated from their current location to a space adjacent to the tunnel vent building along 12th Avenue.

B. Trailer Storage/Parking and Loading Dock Exhaust

1. These designated areas will be provided with a system of variable speed controlled Axial fans located in a louver penthouse sections on the roof providing the necessary mechanical exhaust ventilation rate.
2. A total of 10 exhaust fans will be provided, each handling a total of 41,000CFM exhaust, plus an additional exhaust fan which will act as a standby fan which will operate during the failure of any one fan. Each fan will be rated at 30HP.
3. An Exhaust shaft along the south side of the truck-park will connect the fans to each floor of the truck-park with exhaust grilles/louvers on the vertical face the exhaust shaft at each floor. Fire/Smoke dampers will be provided at the back of each exhaust grille/louver to enable shutting down the exhaust to any floor as required during a fire.
4. The Exhaust shaft will have an internal clear width of 4 ft. The exhaust louvers will be vertically mounted in the louver Penthouse with a total louver area of 1800SF.
5. Make-up air for the mechanical exhaust fans will be via openings in the building structure on the north side. Where necessary, ceiling mounted impulse fans will be provided to assist the movement of make-up air to areas where there is minimal air movement.
6. Make-up air to the single basement level will be via intake plenums at the NE and NW corners of the ground floor with mechanical fan assist to distribute air down to the basement and along the entire northern length of the basement floor.
7. Exhaust fans will maintain between 0.05 cfm/sqft to 0.75 cfm/sqft of exhaust ventilation air to the space. Controls will include VFD and CO monitoring. The system will be designed to automatically maintain a CO concentration level of 25ppm.

C. Toilet / Pantry Exhaust

1. Toilet exhaust system will be provided for toilet ventilation. A vertical riser in each toilet room will exhaust the toilets through a fan located on the roof. Approximately 100% of make-up air for toilet exhaust will be transferred from adjacent spaces.

2. The level 4&5 warming/staging will have an exhaust fan located on the roof above the pantry area.

D. Kitchen Exhaust System

1. The kitchen located on Level 5 shall be equipped with a kitchen exhaust system. The exhaust fan(s) shall be determined by the kitchen hood type, capacity and quantity. The kitchen exhaust fan(s) shall be located on the roof, maintaining the code required clearances from any fresh intakes and the roof.
2. The kitchen exhaust duct shall comply with the NYC mechanical code.
3. The kitchen hood makeup air shall be untreated raw fresh air ducted from level 1 sidewall louvers into or adjacent to the exhaust hoods.
4. The kitchen's gas fired hot water heater (by plumbing) shall have a vent duct that will terminate 3 feet above the roof.

E. Heating System

1. The heating system will be comprised of electric heating coils contained within the rooftop AC units.

F. Building Management System and Control System

1. A microprocessor based, distributed logic, peer-to-peer, direct digital control, building management system will be provided to monitor, control and optimize the operation of the HVAC systems, and monitor and alarm the operation of critical electrical and plumbing systems.
2. Two full operator stations will be provided; one in existing security and fire command center of the main JJCC building and one in the new expansion building. Each operator station includes not less than: (1) 2.0 GHz microprocessor PC with 1 Gb of RAM, a RW DVD burner, a 300 Gb hard drive, an integral wireless modem and network card, 512 mb video card, a 42" LCD display, a wireless mouse and keyboard; (1) laser printer for alarms, and (1) data trend and logging color laser printer. Also provide two laptop computers to serve as portable BMS system interfaces. The laptops are to have similar capacities as the full operator stations.
3. The system will include full Windows-based dynamic graphics.

4. Stand-alone local Direct Digital Control (DDC) panels will monitor and control Base Building air conditioning systems.

G. Miscellaneous Systems

1. Electrical closets will be exhausted via transfer fans. Make-up air will be via door or wall louvers.
2. Electric unit heaters will be provided for BOH areas where necessary.

2.5.2 ELECTRICAL SYSTEMS

2.5.2.1 New Electrical Service

1. The main building electrical service will consist of six new 7.5 MVA transformers located on the 3 M level as shown on drawing MEP-3M. The service capacity is sized to accommodate all existing building and additional North Expansion.
2. The existing electrical service will be removed in its entirety once the new service or temporary service is installed, operational and accepted by Javits.
3. New electrical concrete encased duct banks will be provided from the existing 3 Con ED manholes located just north of the existing main electrical service switch yard.
4. Each duct bank from each manhole will consist of 3 FRE conduits that are concrete encased per the latest Con ED E0-2022 standards. Only 2 conduits will have cables. One conduit will be a spare conduit. It will be bifurcated in a above ground pull box under the service platform. From this above ground box, each service will have 2 concrete encased conduits installed to each of the 6 service switches. Each switch will have a spare conduit from the above ground box to each service switch.

2.5.2.2 Distribution

1. The existing medium voltage (MV) feeders originating from the new main service switchgear will be intercepted in the existing manhole behind the existing main switch yard as indicated on Drawings E-3 and E-4. Four of the existing MV cables will be spliced and relocated to the new main switchgear platform. Each splice will be a water proof splice. One of the 500 MCM feeders will be replaced with new 750 MCM cable as shown on E-4.
2. There will be 3 new 13.2KV/480-277 volt substations and 2 - 13.2 KV/ 208-120 volt substations to support this new North Expansion. All the new low voltage substations will be provided with power type circuit breakers per UL standard 1558.
3. These substations will feed 2000 amp switchboards which will feed power panels located throughout the facility in electrical closets as needed. Refer to drawing E-5 for proposed North Expansion power riser diagram.

4. The existing switchgear rooms are expected to remain intact as is. These rooms step down to 120/208V and 277/480V. These voltages are distributed throughout the building to existing electrical closets.

2.5.2.2 Lighting and Lighting Control

1. Lighting will be designed to highlight the architecture and functional task areas while providing a highly energy efficient lighting system. Feature architectural elements will be illuminated to help organize the space and create a grand sense of arrival and activity
2. Metal halide high bay fixtures will be used in the exhibition space to match existing. All other new spaces will utilize LED lighting sources. Light fixtures shall utilize high efficiency photometrics and provide low glare illumination.
3. Light sources will achieve energy efficiency with a high lumen per watt ratio, have long lamp life to reduce replacement and maintenance costs and aid visibility by having a Color Rendering Index of at least 80 CRI.

A. MAJOR PROJECT AREA DESCRIPTIONS

4. Building Façade - Exterior building lighting at glazed areas will be provided by interior lighting transmitting through transparent fenestration. The breathable façades along 40th street and 12th avenue will be illuminated with linear LED fixtures placed at each vertical structural member. In addition, uplight will be placed at the base of the breathable façade to graze light up the façade surface. Pedestrian level lighting will be provided by building mount downlights.
5. Roof Landscape – The public access roof terrace will be illuminated via low level bollard style light fixtures or wall recessed steplights in order to preserve views to the river and city skyline. Trees and plants will be illuminated via stake mount uplights. Entrance and exit doors will be highlighted by wall mount downlights.
6. Building Entry - The building entry will be highlighted to create a destination when viewing the building from a distance. Uplighting and downlighting will be incorporated into the entry canopy to create a clear

entry destination. The entry plaza will be illuminated via pole mount area light to help differentiate between auto and pedestrian pathways.

7. Public Circulation Areas – Lighting within circulation areas will be designed to maximize flexibility, illuminate functional requirements, and reinforce wayfinding while highlighting architectural features. Architectural feature walls will be washed with light while lighting integrated into the structure will provide usable light at the floor.
8. Atrium – The vertical structure of the atrium including walls and columns will be highlighted to reveal architectural form. Escalators and stairs will have handrail integrated lighting to light the pathway without the necessity of down lighting from a great distance. Flexible theatrical style lighting in the form of theatrical pipe with plug-ins will be provided to provide for special event lighting.
9. Exhibit Space – Metal halide high-bay light fixtures will be used and spaced to match lighting in the existing exhibit hall. A theatrical flexible system will be used to match lighting for special installations in the existing exhibit hall.
10. Meeting Rooms – Recessed LED downlights will be space evenly to provide even and bright illumination at table height. Recessed accent lights will be used at speaker locations to highlight the speakers.
11. Meeting Room Prefunction – LED cove uplights will be used to provide uplight onto ceiling coffers. Downlights will be used as needed to provide lighting at seating areas. Vertical features walls will be washed with light.
12. Ballroom – Linear LED uplights will be mounted along the bottom edge of skylight structures to illuminate the modulated ceiling. Downlights will be integrated into the structural bays to provide bright, even illumination at table height. Accentlights will be utilized to highlight speaking areas. A system of flexible theatrical style lighting will be provided in the form of theatrical pipe with plug in boxes.
13. Ballroom Prefunction – Lighting will be integrated into the skylight structure to provide grazing wallwash at the ballroom entrance feature wall and to provide downlight

on to circulation and seating areas. Lighting will be designed to preserve views of the city skyline.

- 14. Back of House Spaces – Linear LED utility fixtures will be used to provide bright, even illumination.
- 15. Daylighting – Project daylight patterns will be reviewed and coordinated with the Architects to maximize connection to nature and time of day changes while reducing electric lighting loads during daylight hours. Light fixtures in the daylighted public areas, prefunction spaces and ballroom areas will be equipped with dimming drivers to allow for automatic electric light load shedding with no noticeable change in light levels. Photocells will be carefully placed to read daylight levels accurately, making the daylight control system automatic and user-friendly.
- 16. Lighting Controls - A series of networked lighting panels will provide automatic control of the lighting system. The lighting control system shall have a centralized lighting management server and workstation with software provided by the system manufacturer. Present control system stations will be provided as indicated on drawings. DMX control will be provided at locations where theatrical special-event lighting will be used. Control devices such as occupancy sensors and daylight photo sensors shall be wireless. Automatic sweep off of light fixtures will save energy while local override switches will provide for after-hours use. Occupancy sensors will be used in all private offices, meeting rooms, storage and support spaces to ensure light fixtures are not on when the room is not in use. Exterior light fixtures will be controlled via one central photocell and by the building time clock for further fine tuning of hours of operation. Lighting control system and equipment shall be provided by the same manufacturer. Example product is Lutron Quantum system.
- 17. Exit signs shall be edge-lit and utilize high efficiency LED sources. Emergency egress lighting will be provided to achieve a minimum of 1 fc along path of egress via an emergency generator grid system as described in the electrical section of this narrative.
- 18. The lighting systems are being designed in accordance with the recommendations of the Illuminating Engineering Society and New York City Energy Code.

19. LIGHTING SYSTEM GUIDELINES AND GOALS

20. The Lighting system will be designed to meet the following goals and guidelines for each program area:

Area	Target Illuminance	Design Intent	Light Source	Watts per s.f.
Breathable Facade	General 1 fc	Linear LED fixtures mounted vertically at each structural member. Additional floodlighting provided from the base of the façade wall.	LED	0.1
Pedestrian sidewalk	General 2 fc	Building mounted downlights provide safe light levels around the building perimeter.	LED	0.1
Roof Landscape	General 1 fc	Low level area light fixtures such as bollards and wall recessed steplights will light the landscape. LED uplights to light trees and plants.	LED	0.1
Building Entries	General 5 fc	Uplight and downlight fixtures integrated into building canopies to light the ground plane and architectural features.	LED	0.4
Public circulation	General 15 fc	Architectural features wall will be washed with light with downlights used to provide even light levels. Theatrical style lighting will be provided for event lighting	LED	0.8
Atriums	General 10 fc	Vertical feature wall will be washed with light. Escalators and stairs will have handrail integrated light fixtures.	LED	1.0

Area	Target Illuminance	Design Intent	Light Source	Watts per s.f.
Exhibit space	Low 10 fc High 50 fc	Metal halide high bay fixtures will be used to match existing.	MH	1.5
Meeting room	General 30 fc	Recessed downlights spaced evenly to provide even illumination	LED	1.2
Meeting Room prefunction	General 15 fc	Vertical features will be washed with light. Downlights will provide lighting on circulation and seating areas.	LED	.7
Ballroom	General 30 fc	Linear indirect light fixtures will uplight skylight structure. Downlights will provide even lighting levels at tables, accentlights will highlight speaker locations. Theatrical style systems will provide flexible light levels.	LED	1.3
Ballroom prefunction	General 15 fc	Vertical features will be washed with light. Downlights will provide lighting on circulation and seating areas.	LED	.7
Storage	General 25 fc	Direct light fixtures will provide task light levels.	LED	.7
Shipping /receiving	General 30 fc	Even light levels will be provided by energy efficient light fixtures.	LED	.8
Restrooms	General 20 fc	Even bright light levels will be provided. Vanities will be lighted to a higher light level via decorative wall mount sconces.	LED	.7
Mechanical/Electrical rooms	General 30 fc	Strip fluorescent light fixtures will be evenly spaced around mechanical and electrical equipment	LED	.8

2.0 Expansion Concept Design

Notes:

Target illuminances are shown in maintained average footcandles at ground plane for exterior areas and at work plane height for interior areas. MH indicates a Metal halide light source, LED indicates a LED light sources.

2.5.2.3 Power (Receptacles, Bus Ducts, & Floor Ports)

1. Power will be provided to added areas under the new Scheme construction. Power will consist of receptacles, bus ducts, floor ports and floor boxes in some spaces.
2. Exhibition areas will be provided with floor ports, 460/265V overhead bus ducts, 208/120V overhead bus ducts, and convenience receptacles. Each new exposition hall space will contain both 460/265V and 208/120V overhead bus ducts running North-South within the exposition hall.
3. The floor ports will have separate compartments for power and communications devices. Each floor port will contain one (1) 60A 4-pole 5 device, two (2) 30A 4-pole 5 devices, and telecommunications/AV devices per separate consultant instruction. Any overhead catwalks will be provided with a dedicated receptacle system.
4. Separate power panels will be provided for configurable area. Bus ducts will be powered directly from the unit substations.

2.5.2.4 Emergency/Standby Power

1. The existing emergency source of power for this facility is 2 diesel type emergency generators. They provide life safety power throughout the facility. One of the generators is located on South West corner of the facility and the other generator is located on the North West side of the facility. The generator located on the North West side of the facility is to be demolished.
2. The existing north side generator will be removed and replaced with a 1.5 MW diesel generator and located on the 3M level.. The existing south generator will remain.
3. The new 1.5 MW diesel generator will provide life safety power to the existing Javits emergency distribution system located on the North West corner electrical room on level 1 and the new North Expansion.

4. The new 1.5 MW diesel generator will be provided with an emergency power distribution system. The system will provide backup power to loads such as, but not limited to, life safety lighting, elevators, fire alarm systems, fire pumps, atrium smoke exhaust, and other miscellaneous critical loads.
5. A new stand by generator plant will be provided with 3 - 2.5 MW diesel generator with 1000 gallons belly tanks in outdoor environmental enclosure. All 3 generators will be connected together via a 13.2 KV, 1200 amp, 3 phase, 3 wire, 250 MVA paralleling switchgear with 6 output medium voltage circuit breakers. The paralleling switchgear will need to be connected to the BMS system so they can shut down compressors in all the HVAC compressors in every unit.
6. All the generators and paralleling switchgear are to be raised off the roof floor by 2 feet and mounted on steel dunnage with a cat walk and hand rails around all the generators.
7. Medium voltage feeders will need to be run to the main service switchgear and connected as shown on the electrical one line diagrams with a kirk key system that has been approved by Con Edison.

2.5.2.5 Fire Detection, Alarm System

1. The new North Expansion will be provided with a new Fire Command Center (FCC). The system will be provided with all new devices and controls and meet the latest requirements of the latest NYC electrical code and NYC building code. This will include devices such as, but not limited to, manual pull stations, smoke detectors, duct smoke detectors, heat detectors, water flow monitoring devices, tamper switch monitoring devices, visual alarms, audible evacuation speakers, and combination audible/visual devices.
2. This includes with a pre-signal panel in the halls, similar to the existing Halls and a radio repeater system as indicated in the NYC building code.

3. This new FCC will be interconnected with the existing FCC so you can run the facility from either FCC. This will be constructed similar to the existing and also be used as a security command center.
4. The building cannot be without proper fire alarm coverage. The existing fire alarm system is an EST-3 Hi-End network panel addressable system by G.E. Security EST/Edwards Technology. Once the new system is completed, the existing Javits Fire Alarm System will be revamped in its entirety with a new system. This will include devices such as, but not limited to, manual pull stations, smoke detectors, duct smoke detectors, heat detectors, water flow monitoring devices, tamper switch monitoring devices, visual alarms, audible evacuation speakers, and combination audible/visual devices and a completely new head end and voice evacuation system.
5. While the revamped system is being constructed, the existing will remain operational until new FCS is complete. Once the existing Javits system is complete, both FCS's will operate as one system with the ability to be able to operate everything from either of the 2 FCS's.

2.5.2.6 Security

1. Empty raceway for the security system will be provided for the new Scheme added areas. Modifications to the existing security system will be assessed on a case by case application.

2.5.2.7 Telephone Raceways

1. Empty raceway, conduit sleeves, cable trays, and back boxes will be provided for the telecommunications system added in the new Scheme construction spaces. The location of telecommunications outlets will be determined by separate consultant. Floor boxes and floor ports to be provided with telecommunications outlets determined by separate consultant.

2.5.2.8 Lightning Protection

1. A Master Label lightning protection system will be provided under the new Scheme construction. Lightning protection system to consist of roof mounted air terminals and conductors bonded to the building structural steel. Existing grounding ring to be modified as required, if new construction affects its integrity. A temporary ground ring

will be provided during construction until the permanent ring is installed and operational. Existing lightning protection components located on existing roof will be removed as needed during Scheme construction.

2.5.2.9 Master TV/Radio Antenna

1. Empty raceway for the main building master TV/radio antenna will be provided under the new Scheme construction.

2.5.3 PLUMBING

2.5.3.1 General

1. Provide storm drain and area garage drain
2. Civil and/or expeditor to confirm requirement for storm detention tank and verify if new sewer connection is required.
3. Provide sump pump at level 00
4. All new plumbing work will be designed and installed in accordance with the New York City Plumbing Code, 2014 edition and the NYC Fuel Gas Code, 2014 Edition.

2.5.3.1 Description of Systems

A. Domestic Water Supply System

1. Operating Pressure in the domestic water system will be Maximum 80 psi, minimum 35 PSI.
2. Pressure Drop due to Friction will be 2 psi/100 feet maximum.
3. Velocity will be 6 feet per second maximum.
4. Pipe sizing will be in accordance with the Hazen-Williams "C" factor as follows:
 - i. Copper: 130.
 - ii. Steel: 100.
 - iii. Cast-iron: 100.
5. Water flow requirements for plumbing fixtures will be developed in accordance with the fixture unit method as indicated in the NYC Plumbing Code. 100% of the total fixture units connected will be used as a design point for pumps, mains, risers and branches.
6. Backflow preventers and/or vacuum breakers will be provided at all interconnections between the potable water system and points of possible contamination.
7. A reduced pressure zone or double check valve assembly will be installed for all domestic water connections to mechanical equipment.
8. Provide backflow prevention devices at domestic water service point of entry per New York City Department of Environmental Protection Rules.
9. Provide a domestic water VFD booster pump system to supply all plumbing fixtures and equipment.
10. Domestic water piping run in areas subject to freezing will be provided with electric heat trace freeze protection. Exposed piping will have metal jacket covering over the insulation. All domestic water piping will be insulated.
11. Cold water will be provided to loading dock via non-freeze wall hydrants.

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12. Domestic cold water will be provided to all new bathrooms. Piping will be sized in accordance with 2014 New York City Plumbing Code.
13. Domestic cold water will be provided to the kitchen area, and be sized to handle the load.
14. Cold water will be provided to roof hydrants for wash down. Hydrants will be self-draining.

B. Domestic Hot Water System

1. Domestic hot water heaters for public toilets will be electric, point of use, located in an accessible location mounted, above the ceiling or on the floor, with a drain pan below each heater, piped to a service sink or other approved drainage receptacle. Basis of design for domestic water heaters is as follows:
 - i. Storage: 0.5 gallons per lavatory minimum.
 - ii. Recovery: 1.0 gallons per hour per lavatory minimum.
2. A gas fired, storage type heater will be provided for the kitchen.
3. A new set of electric tank hot water heaters will be installed in the kitchen B.O.H. space. Hot water will be stored at 140°F to kill off legionella growth. Water will be distributed to the kitchen in two temperatures. Temperature (1) is 140°F. This water will go to prep sinks and dish washers. Temperature (2) is 110°F. This water will go to all hand sinks and low temp hot water required fixtures. The 110°F hot water will be mixed down from 140°F via a set of hot water mixing valves after the heater.
4. A new set of electric tank hot water heaters will be installed in bathroom ceiling or janitor closet.

C. Sanitary Drainage and Vent System

1. The sanitary drainage system piping will convey all waste water from plumbing fixtures, drains and equipment above the first level by gravity to the sanitary house sewer. The sanitary house sewer will connect to the storm house sewer on the street side of the storm house trap.
2. Provide a sanitary house trap and fresh air intake at the point of connection to the combined house sewer. The fresh air intake will extend and terminate above street level.

3. The sanitary vent system piping will extend up through the roof to atmosphere. The sanitary vent system will protect plumbing fixture and drain trap seals from siphonage.
4. Sanitary drain piping which runs in areas subject to freezing will be provided with electric heat trace freeze protection and insulation. Insulation will have metal jacket.
5. All bathrooms will be provided with sanitary and vent connections. Sanitary and vent lines will be sized in accordance with 2014 New York City Plumbing Code.
6. New sanitary and vent connections will be provided to kitchen. Lines to be sized to handle load of new kitchen layout.
7. New grease interceptor to be installed under slab of kitchen. Greases interceptor to be sized to comply with N.Y.C. D.E.P. Best Management Practices (BMPs) for non-residential direct and indirect discharges of grease to public sewer system.
8. All grease waste pipe to be heat traced on the bottom of the pipe.
9. All dry pipe valve rooms to be provided with drain connections.

D. Storm Water Drainage System

1. Storm water from the roof detained on roof using control flow roof drains. Garage drains at all other levels will be conveyed by a conventional gravity drain system. All storm water drains will be conveyed to the oil/water separators located on each level.
2. Oil/water separators will be of the parallel plate type and will produce an effluent of 10 parts per million maximum.
3. Effluent from the oil/water separators will flow by gravity to the rain water harvest tanks on level 1. Rain water harvest tanks will have full size overflow drains. The overflow will be conveyed by gravity to the storm house drain below level 1. Provide storm house traps at the point of exit from the building (West 40th Street). Locate the storm house traps in a pit with a metal access cover.
4. Level 1 and garage drainage will be conveyed by gravity to an oil/water separator. Oil/water separator effluent will be

conveyed by gravity to the duplex sump pump. The duplex sump pumps will be located in a 5'-0" square concrete pit. Sump pump discharge will connect to the gravity storm house drain on the building side of the storm house trap.

5. Under slab drains will be conveyed to the sand interceptor and duplex sump pits.
6. Storm drainage will be collected on site as per N.Y.C. D.E.P. requirements.
7. The site will use roof detention at all possible locations to control the flow of water off roof.
8. Any roof that can't support roof detention (glass or steep slopes) will spill to a lower flat roof.
9. Level of roof detention will be calculated using N.Y.C. D.E.P. criteria for detention facility design.
10. No roof will have more than 4" of stored water on it at a given time.
11. The roof holding the electrical outdoor equipment will not have roof detention.

E. Natural Gas System

1. Pipe sizing will be in accordance with the NYC Fuel Gas Code and the requirements of the local utility company (Con-Edison).
2. Natural gas will be provided to kitchen appliances only.
3. Natural gas piping to be sized in accordance with 2014 Fuel Gas Code.

F. Hose Bibs

1. Hose bibs will be provided for maintenance purposes at specified locations throughout the building.
2. Provide non-freeze wall hydrants on the exterior wall, 24" above finished grade spaced 50 linear feet apart maximum.

G. Drains

1. Drains will be provided in accordance with the following schedule:

- i. Mechanical equipment rooms.
- ii. Fan Rooms.
- iii. Public toilet rooms with more than one water closet and/or urinal.
- iv. Plumbing meter room.
- v. Plumbing equipment rooms.
- vi. Storage rooms larger than 100 square feet in area.
- vii. Maintenance shops.
- viii. Exhibition area floor ports
- ix. Kitchen

- | | Fixture | Trim |
|------|----------------|----------------------------------------|
| i. | Lavatories: | Automatic self-closing faucet, 0.5 GPM |
| ii. | Water Closets: | Low flow 1.28 gallons per flush |
| iii. | Urinals: | Low flow – 0.125 gallons per flush |

H. Water Supply Systems

1. A new incoming domestic water service will be provided. New meter and backflow device will be installed in accordance with NYC DEP Rules.
2. Provide point of use domestic electric storage water heaters and controls for plumbing fixtures in public toilets requiring hot water. Electric water heaters will be located above the ceiling or on the floor. The heaters will be provided with a pressure and temperature relief valve. Hot water temperature in the piping up to plumbing fixtures will be maintained with automatic self-regulating heater cable.

I. Plumbing Fixtures

1. Plumbing fixtures will be proven quality equipment with manufacturers having a New York City representative that can readily supply replacement parts. Fixture types and manufacturers will be approved by the Architects. Fixtures will meet the water conservation flows:

FIRE PROTECTION

2.5.4.1 General

1. Dry sprinkler system to be provided throughout the Marwilling building.
2. Dry and wet standpipe system to be provided. Automatic wet standpipe risers will be installed in each stairway, dry standpipe to be installed where fire hose valve coverage from stairs is not enough.
3. Heat tracing for standpipe feed main will be required.
4. Heated room for dry check valves will be required per each floor.
5. It is assumed, based on current Javits North design that no fire pump will be required.
6. The fire protection systems will comply with the requirements of the NYC building code, NFPA-13, NFPA-14, NFPA-20 and NYC Fire Department regulations.
7. All equipment used in the fire protection systems will be FM approved and UL listed.

2.5.3.2 Design Criteria

A. Automatic Wet Pipe Sprinkler Systems

1. Density:
 - i. Driver Rest Areas: 0.15 gpm/sqft, 1,500 sqft. area of application
 - ii. Toilet & Corridor Area: 0.10 gpm/sqft, 1,500 sqft. area of application
 - iii. BOH Area: 0.15 gpm/sqft, 1,500 sqft. area of application
2. Head Spacing: 130 sq. ft. per head maximum. 225 sq. ft. per head maximum for only light hazard areas(toilets, corridor and etc..)
3. Application: Expo areas, meeting rooms and mechanical rooms will be ordinary hazard occupancy. Office areas and public toilets will be light hazard occupancy.
4. All automatic dry pipe sprinkler systems piping will be hydraulically designed to minimize pipe sizes.

5. Automatic wet sprinklers will be supplied from the existing 10" combined main.

B. Automatic Dry Pipe Sprinkler Systems

1. Density:
 - i. Trailer Storage Area: 0.43 gpm/sqft, 2,600 sqft. area of application
2. Head Spacing: 130 sq. ft. per head maximum.
3. Application: All areas subject to freezing.
4. All automatic dry pipe sprinkler systems will be hydraulically designed to minimize pipe sizes.
5. Automatic dry pipe sprinklers will be supplied from the existing 10" combined main.

C. Fire Standpipe System

1. The fire standpipe hose racks will cover all areas of each floor with 125 feet of 1-1/2" hose (plus) 20 foot spray).
2. Provide auxiliary hose valves in cabinets where required.

D. Combined Standpipe and Automatic Sprinkler System

1. The existing combined standpipe and automatic sprinkler system in the existing Convention Center will be extended into the new expo area.
2. Supplied from the existing 2,500 GPM automatic fire pumps.
3. Relocate existing Fire Department Siamese inlets on the north side of the existing building to the north wall of the expanded expo building.

2.5.3.3 Description of Systems

A. Automatic Wet Pipe Sprinkler Systems

1. The automatic wet pipe sprinkler systems will be supplied from the existing combined main. Each sprinkler zone will cover a maximum area of 52,000 square feet for light or ordinary hazard area and 40,000 square feet for Expo Area.

2. Each zone wet pipe automatic sprinklers will be controlled and monitored with a sprinkler floor control valve assembly. Each valve assembly will have provisions for draining and testing. The sprinkler floor control valve assembly will consist of the following:
 - i. Shutoff valve with tamper switch.
 - ii. Water flow switch.
 - iii. Test/drain valve assembly.
 - iv. Pressure gauge.
 - v. A check valve

3. Provide a system of 1-1/2" drain piping to convey drain or test water. Spill drain piping to standpipe drain with air gap.

4. Sprinkler heads will be quick response and concealed type, 165°F fusible link, 1/2" orifice (5.6K factor), all bronze construction for meeting rooms. Standard response, 286°F fusible link and 17/32" or 3/4" orifice(8.0 or 11.2K factor) will be provided for Exhibition Area

5. Piping 2-1/2" and larger will be schedule 10 steel. Piping 2" and smaller will be Schedule 40 black steel. Schedule 10 piping will be rolled grooved for mechanical couplings. Schedule 40 steel piping will be grooved for mechanical couplings or threaded. Piping 1-1/2" and smaller will have threaded couplings. Fittings will be standard weight malleable iron. As an alternate, provide Schedule 40 black steel pipe for sizes 2-1/2" and larger.

6. Automatic wet pipe sprinklers will be supplied from the 6" standpipe riser. Auxiliary drains will be provided at low points.

B. Automatic Dry Pipe Sprinkler Systems

1. All loading dock areas to be provided with dry pipe sprinkler protection.

2. All fire pipe subject to freezing must be heat traced, and a thermostat alarm must be placed on the pipe.

3. The automatic dry pipe sprinkler systems will be supplied from the combined main. Each sprinkler zone will not exceed 750 gallons capacity.

4. Each zone of dry pipe automatic sprinklers will be controlled and monitored with a dry pipe valve assembly.

Each valve assembly will have provisions for draining and testing. The dry pipe valve assembly will consist of the following.

- i. Dry valve with basic trim and air maintenance device.
 - ii. Alarm (water flow) and trouble(air maintenance) high-low pressure switches.
 - iii. Shut-off valve with tamper switch.
 - iv. Pressure gauges.
 - v. Automatic air compressor.
5. Sprinkler heads will be standard response type, 165°F fusible link, 17/32 or 3/4" orifice. (8.0 or 11.2K factor), all bronze construction.
 6. Piping 2-1/2" and larger will be Schedule 10 galvanized steel. Schedule 10 piping will be rolled grooved for mechanical couplings. Piping 2" and smaller will be Schedule 40 galvanized steel with mechanical and/or threaded couplings. Piping 1-1/2" and smaller will have threaded couplings. Fittings will be standard weight galvanized malleable iron.
 7. Automatic dry pipe sprinklers at each floor will be supplied from 6" wet standpipe risers. A 3" drain riser will be run along side of the standpipe riser. Auxiliary drum drip drains will be provided at low points.
 8. All devices used in the automatic sprinkler system will be U.L. listed and approved by Factory Mutual.
 9. Provide an automatic air compressor with receiver at each floor to maintain air pressure in each zone of dry pipe sprinklers. Each air compressor will serve one zone.

C. Fire Standpipe System

1. Connect new piping and risers to the existing 10" combined main.
2. Piping will be Schedule 10 steel for sizes 2-1/2" and larger up to 175 PSI. Over 175 PSI piping 2-1/2" and larger will be Schedule 40 black steel. Piping will be threaded or grooved for mechanical couplings. Fittings will be standard weight malleable iron. Schedule 10 piping will be rolled grooved for mechanical couplings.
3. Provide auxiliary fire hose racks in cabinets where additional standpipe coverage is required.

D. Combined Standpipe and Automatic Sprinkler System

1. Supplies standpipe and automatic wet and dry sprinkler systems.
2. The new combined system will be supplied from the existing fire pump and the relocated 2,500 GPM automatic fire pumps. Each existing pump is supplied from two independent 20" street mains.
3. Remove the existing 2500 GPM automatic fire pump in the north pump house and 10" main into the existing convention center building. Cap the existing 10" fire protection main in the existing convention center.
4. Provide Fire Department Siamese connections, spaced 300 feet apart maximum, on the ground level of the new expanded expo building facing 40th Street. Siamese will be located 18" to 36" above finished grade.
5. A 3-way manifold with (3) 2½" hose valves will be located at the roof level per N.Y.C. Fire Department requirements.

2.6 TRANSPORTATION

(Prepared by Sam Schwartz Engineering)

A truck marshalling area, trailer storage area, and additional loading docks are included as part of the potential expansion of the Javits Convention Center. The expansion would provide opportunities to improve truck operations and logistics and increases in overall efficiency to better serve its customers and reduce impacts to the community. The following discussion is an analysis of the benefits of the current proposed design concept plans.

2.6.1 Truck Operation Assessment

Observations were conducted at the Javits Center for three shows during Summer 2014 to understand operations and challenges of the move-in and move-out processes. The Fancy Food (June 29 to July 1), Women’s Market Week (August 3 to August 5), and NY NOW (August 16 to August 21) shows were included in the observations as they represent full-building shows with a range of operational features, such as the number of general contractors responsible and type of operation (heavy hand-carry or freight-intensive).

Data was collected during three days of the move-in process (6 AM to 6 PM) and two days of the move-out process (4 PM to 8 PM the day the show ended and 6 AM to 2 PM the day after the show ended). The following information was recorded during the observations:

- # trucks entering/exiting existing marshalling yard
- # trucks entering/exiting existing loading dock
- # vehicles entering/exiting inner roadway
- Truck size (number of axles)
- Travel time: marshalling yard to loading dock
- Loading/Unloading time: time spent in loading dock
- Background traffic congestion

2.6.2 Existing Conditions Summary

General observations and data collected for each show were summarized to understand truck and trailer storage, local street circulation, and move-in/move-out operations.

Truck Storage: Truck storage for Javits Center operations include off-local street storage in the marshalling yard, on-street, and on-site within the loading dock. The existing marshalling yard provides storage for approximately 120 trailers and is used only by the general contractor to store the decorator trailers. The over-the-road freight delivered by the exhibitors must park on-street until a loading dock is available. The over-the-road freight was observed

parking on West 33rd Street, West 34th Street, West 40th Street, West 41st Street, Eleventh Avenue, and Route 9A. Route 9A between West 34th Street and West 39th Street is the only on-street area signed to allow “Truck Waiting”. On-site, there are 52 existing loading docks (43 are in use) that could be considered additional storage. The total off-local street storage available can accommodate between 178 and 187 trucks/trailers.

On-Street Circulation: Observations of on-street circulation considered the background traffic congestion, the travel time between the marshalling yard and the loading dock, and trucks circulating on-street. Background traffic congestion was observed, particularly on Route 9A during the AM peak periods and on 40th Street and Eleventh Avenues during the PM peak periods, but did not have a substantial impact on Javits truck operations. The travel time between the marshalling yard and the loading dock was generally less than ten minutes even with congestion on Route 9A. On-street truck circulation included truck trips to the marshalling yard, between the marshalling yard and the loading dock, between the loading dock and the marshalling yard, and from curbside parking spaces to the loading dock. Due to inefficiencies in the existing loading dock design, including the lack of multiple weigh stations and on-site crate storage, trucks were observed making multiple trips to and from the loading dock.

Move-in/Move-out Operations: The observations included an assessment of loading/unloading times, which were found to generally take between 1 and 2 hours. Additional information regarding the move-in/move-out operations was provided by the general contractors. One of the critical issues is the efficiency of dock operations. When a loading dock becomes available during the exhibitor move-in or move-out, there is typically lost-time associated with filling the loading docks while the over-the-road trucks travel from their on-street parking spaces to the loading dock.

2.6.3 Truck Storage Building

The findings from the existing conditions observations were used to assist with the design of the proposed truck storage building to maximize trailer storage, on-site truck marshalling, and provide additional loading docks. The latest design is described below.

The truck storage building would consist of four floors. Level 1 of the truck storage building would have two trailer storage areas (with a combined total of approximately 10 spaces during the move-in/move-out periods), a truck marshalling area that could accommodate approximately 56 73-foot trucks, and 27 (14 new) loading docks. Levels 0, 3, and 4 would have between 30 and 55 trailer storage spaces on each level, and Level 3 would have an

35 (16 new) loading docks. In total, the truck storage building would provide approximately 250 to 290 trailer storage spaces.

A pair of scissors-type truck ramps would provide for circulation to the upper floors and basement level. Entry into the building would continue to be from Route 9A at a new driveway north of West 39th Street. Trucks would be able to exit either directly onto West 40th Street or West 34th Street via the existing loading docks.

2.6.4 Reduction of Trucks Parked On Local Streets

The breakdown of the existing and proposed off-local street truck storage spaces is shown in **Table 1**. With the proposed truck storage building, the number of off-local street spaces for 73-foot trucks (WB-67) would increase by approximately 60 percent. In other words, the truck storage building would have the capacity to accommodate approximately 100 over-the-road trucks on-site.

Table 1: Off-Local Street Truck Storage

	Existing	Truck Storage/ Marshalling Building
Trailer Storage	120	130 to 151
Marshalling	0	45 to 56
Loading Docks	43 to 52	73 to 82
Route 9A Truck Waiting Line	1,100 LF (15 trucks)	1,350 LF (18 trucks)
Total off-local street storage capacity	178 to 187	266 to 307

Additionally, a greater number of trucks would be able to queue on Route 9A in the designated truck waiting area by relocating the entrance driveway approximately 250 feet to the north. This marshalling area is on the street network but away from the community.

2.6.5 Reduction of Truck Trips on Local Streets

For some shows, trucks must be weighed before and after loading/unloading at the loading dock. Currently, there is only one weigh station near the entrance of the existing truck entrance on West 39th Street. Therefore, after unloading at the loading dock, a truck must circle around by leaving the facility at West 34th Street, turning right onto Route 9A, and re-enter the facility to be weighed again. By installing additional weigh stations throughout the facility, the need for trucks to re-circulate for weigh-in/weigh-out on local streets would be eliminated, which is equivalent to up to a 50 percent reduction in over-the-road truck trips.

The marshalling area is currently located south of the Javits Center between West 33rd and West 34th Streets. Trucks called from the marshalling facility to the loading docks must exit the facility on West 33rd Street, turn right onto Route 9A, then turn right on West 39th Street into the loading docks. Trucks being sent to the marshalling facility from the loading dock must turn left at the loading dock exit on West 34th Street, turn right on Eleventh Avenue, turn right onto West 33rd Street, then turn right into the marshalling area. By combining the truck marshalling and trailer storage areas on-site, trucks would be able to move directly from the marshalling area to the loading docks within the Javits Center. Trucks traveling from the loading docks to the trailer storage area would only need to exit the loading docks on West 34th Street, turn right onto Route 9A, and then turn right into the truck storage building. As a result, the total amount of circulation would be reduced by approximately 55 percent per truck for each trip between the marshalling yard and the loading dock. During the course of the move-in/move-out processes, the total distance traveled on local streets would be reduced from 2.3 miles to 0.8 miles.

2.6.6 Increased Overall Operational Efficiency

The existing loading dock consists of 52 docks, 9 of which are currently used for activities other than loading/unloading during shows (such as refuse collection), resulting in only 43 usable loading docks. In the future, the expanded truck storage building would have a separate area for refuse collection, potentially freeing up the 9 currently unusable docks. In addition, 30 new loading docks would be provided in the future design, resulting in a total of 82 usable loading docks. Therefore, this increase in usable loading docks could result in a 90% increase in efficiency.

With the truck marshalling area located on-site, the time lost between filling empty loading docks would be reduced. As soon as a loading dock is cleared, another truck in the nearby marshalling area can be sent to the empty dock in a short amount of time. The overall loading dock operations becomes more efficient as each dock spends less time empty and more time in use. Any trucks staging on-street would be called up to the back of the marshalling queue so that all trucks waiting for docks would be on-site when a dock becomes available.

A second exit on West 40th Street would allow for simultaneous exit trips further increasing truck marshalling efficiency. A truck leaving from the trailer storage area intending to exit the facility could use the West 40th Street exit without going through the existing loading docks.

Jockey cabs (also known as terminal tractors or yard trucks) are a special type of semi-tractor that are specifically used to position trailers within a warehouse or storage facility. They typically have a short wheelbase allowing for greater maneuverability. The use of a jockey cab within the truck storage building may decrease maneuvering time and provide additional efficiency.

As a result of the increased efficiency in marshalling as well as additional loading docks, the overall processing time at the loading docks is projected to decrease. This may encourage additional over-the-road/POVs to use the loading dock rather than load/unload on-street, thus further reducing impacts to the community.

2.6.7 Reduction of Loading Activity on Eleventh Avenue

Currently, some POVs park along Eleventh Avenue and load/unload their vehicles, particularly after a show ends. With the addition of five new loading docks on the ground level, there is a potential to reduce loading/unloading along Eleventh Avenue if POVs are allowed to utilize the new docks.

Also, for POV-heavy shows, the Javits expansion could be used to accommodate POVs when truck volumes are low.

2.7 VERTICAL TRANSPORTATION SYSTEMS

(Prepared with input from Van Deusen & Associates)

2.7.1 Codes and Standards

The elevators and escalators will conform to the following applicable Codes and regulations:

- Safety Code for Elevators and Escalators, ASME A17.1 and latest amendments and all supplements
- Guide for Inspection of Elevators, Escalators, and Moving Walks, ASME A17.2
- New York City Building Code
- City of New York – Appendix K Modified Industry Standards for Elevators and Conveying Systems
- National Electrical Code (ANSI/NFPA 70)
- NFPA, Fire doors - Hoistway entrances
- ASME A17.5/CSA - B44.1 - Elevator and Escalator Electrical Equipment American With Disabilities Act - Accessibility Guidelines for Building and Facilities (AADG).

2.7.2 Design Approach

The design of convention centers should promote the use of escalators. The escalators should be strategically located, open and inviting to the visitors. All escalators should have spacious landing areas to facilitate passenger transfers between the escalators with minimal cross traffic.

The passenger elevators for the convention centers should be spacious and serve all floors to provide convenient service for the disabled, elderly and for the people who are reluctant to ride the escalators. The elevators should be configured to operate with the shortest possible waiting times. The location of the elevator groups and their lobbies should be carefully coordinated so that surrounding pedestrian traffic patterns do not interfere with elevator passengers who are waiting for or exiting the elevators.

General service and food delivery requirements of the convention centers are quite intense and can only be met with dedicated service elevators. The size and carrying capacity of the service elevators should be generous enough not to impede the daily materials management activities. Freight elevators with vertical bi-parting doors should be provided to handle the oversized and very heavy freight functions.

The passenger elevators with capacities up to 4,000 pounds should be designed as the machine-room-less (MRL) type. The passenger elevators with over 4,000 pound capacity and service elevators should be the overhead geared traction type. Where

overrun requirements cannot be met, consideration should be given locating the hoisting machine at the lowest landing served.

2.7.3 Elevator Design Criteria

Interval:

Average time between consecutive elevator departures from a floor in the desired travel direction.

The interval of convention center passenger elevators should not exceed 45.0 seconds. The average waiting time is about 60% of the interval.

5 Minute Handling Capacity:

The number of passengers carried by an elevator or a group of elevators in a peak 5 minute period.

The proposed elevator system should be capable of carrying the projected passenger load during a peak 5-minute period.

2.7.4 Design Considerations and Population projections

Operating Assumptions

- It is assumed that exhibit halls will reach its capacity within 60 minutes.
- The arrival and departure times of the meeting rooms are 30 minutes and 20 minutes respectively.

Population Densities

The following densities have been used to determine the total population of exhibit halls, meeting rooms and restaurants:

- Exhibit Halls : 20.0 sq. ft. of net usable area per person
- Meeting Rooms : 10.0 sq. ft. of net usable area per person

Utilization Factors

The following utilization factors will be applied to determine the actual population of the exhibit halls, meeting rooms and restaurants:

- Exhibit Halls : 85%
- Meeting Rooms : 60%
- Ballroom : 60%

Escalator/Elevator Usage

Experience shows that pedestrian traffic will split between the elevators and escalators as follows:

Floor and Intermediate Landings Traveled

	Traffic Split	
	Escalators	Elevators
One (1) floor	95.0%	5.0%
Two (2) floors	90.0%	10.0%
Three (3) floors	75.0%	25.0%
Four (4) floors	50.0%	50.0%
Five (5) floors	20.0%	80.0%

Peak Time Escalator Carrying Capacity:

An escalator with 40" wide steps – 400 persons in 5 minutes
30 Minute Handling Capacity – 2,400 per escalator.

Elevator and Escalator Passenger Loads

Based on the above population densities and utilization factors, the new Expansion will have the following occupancy loads:

Level 3 Expo Space:

90,000 sf. ft /20.0 sf. ft per person = 4,500 persons
At 85% utilization = 3,825 persons (0.85 x 4,500)

Level 3 Mezzanine Expo Space:

15,200 sf of space to house offices lounge and food service area

Meeting Rooms on Level 4:

Meeting rooms at 49,770 sf. ft.
49,770 sf. ft./10.0 sf. ft. per person = 4,977 persons
At 60% utilization = 2,986 persons

Ballroom on Level 5:

Ballroom at 58,085 sf. ft.
58,085 sf. ft./10.0 sf. ft. per person = 5,808 persons
At 60% utilization = 3,485 persons

2.7.5 Traffic Study

The following proposed elevator and escalator systems will meet the vertical transportation needs of the Expansion. The performance of the proposed elevators and escalators are as follows:

Main Entrance and Internal Public Elevators

The passenger elevator group at the main entrance of the Expansion will include three (6) 6,000 pound capacity passenger elevators. They will serve L2, L3, L4 and L5 at 350 fpm.

The demand on these elevators will peak when an event takes place on Level 5 at full occupancy, about 3,500 persons.

The main entrance passenger elevators will be capable of carrying about 50% of the attendees within a 20.0 minute period after the conclusion of a blockbuster event. The remaining attendees are expected to use the escalators.

The peak time for these elevators will be when a large group of visitors travel between Levels 2 and 5. During the same time, the expo space on Level 3 will place additional demand on these elevators. The proposed six elevators will be capable of handling this combined heavy traffic with an average interval slightly less than 45.0 seconds. For optimum service, all six elevators will be grouped together.

Service and Freight Elevators

Two (2) 8,000 pound capacity service elevators will be centrally located to meet the general service and food delivery needs of the Expansion. The elevators will have overhead geared traction equipment and serve Levels 3, 3M, 3UM, 4, 4M and 5 at 200 fpm.

At the northeast corner of the Expansion, there will be two (2) standard hydraulic freight elevators with in-ground cylinders. Rated at 15,000 pound capacity and operating at 100 fpm, these freight elevators will have oversized platforms to transport cars, small boats, and other bulky and heavy items. The freight elevators will serve Levels 3, 3M, 3UM, 4, 4M and 5.

Escalators

At the main entrance of the new expansion, three escalators will link Level 2 to Level 3, Level 3 to Level 4 and Level 4 to Level 5. These units are configured as parallel escalators, which promote a reversible "two-and-one" configuration to facilitate heavier passenger movement in the primary direction of travel while minimizing walking distance.

The up and down escalators are configured as parallel units. Because of the design of the Atrium, the escalator arrangement does not provide a 180-degree turn-around continuous passenger flow pattern. Rather, ample space is provided between escalator runs to allow passengers to walk within the space to access the next escalator. This will moderately increase the overall transit time.

The proposed escalators, with an hourly carrying capacity of 4,800 persons per unit, will comfortably satisfy the transportation needs of the visitors traveling between the concourse, expo and meeting room levels.

All escalators will have 40" wide steps, stainless steel deckboards, skirts and trims, and safety brushes.

2.7.6 Description of Equipment

The description of the proposed elevators and escalators are as follows:

Public Elevators at Main Entrance to Expansion

Number of Elevators : 6
 Capacity : 6,000 pounds
 Speed : 350 fpm
 Floors Served : 4 @ L2, L3, L4, and L5
 Platform Size : 8'-6" wide x 8'-0" deep
 Entrance Type : Two speed center opening
 Entrance Size : 5'-0" wide x 8'-0" high
 Travel Distance : 89'-0"

Garage Elevator

Number of Elevators : 1
 Capacity : 8,000 pounds
 Speed : 200 fpm
 Floors Served : 5 @ L0, L1A, L3, L3A, L3UM [Roof]
 Platform Size : 6'-10" wide x 12'-6" deep
 Entrance Type : Two speed center opening
 Entrance Size : 6'-0" wide x 9'-0" high
 Travel Distance : 82'-0"

Local Public Elevators (Roof Access)

Number of Elevators : 1
 Capacity : 2,500 pounds
 Speed : 200 fpm
 Floors Served : 3 @ Roof, L4 and L5
 Platform Size : 7'-0" wide x 5'-1" deep
 Entrance Type : Single speed center opening
 Entrance Size : 3'-6" wide x 8'-0" high

Travel Distance : 37'-0"

Service Elevators

Number of Elevators : 2
 Capacity : 8,000 pounds
 Speed : 200 fpm
 Floors Served : 6 @ L3, L3M, L3UM, L4, L4M and L5
 Platform Size : 6'-10" wide x 12'-6" deep
 Entrance Type : Two speed center opening
 Entrance Size : 6'-0" wide x 9'-0" high
 Travel Distance : 75'-0"

Freight Elevators

Number of Elevators : 2
 Capacity : 15,000 pounds
 Speed : 100 fpm
 Floors Served : 6 @ L3, L3M, L3UM, L4, L4M and L5
 Platform Size : 9'-6" wide x 22'-6" deep
 Entrance Type : Vertical bi-parting freight doors
 Entrance Size : 9'-2" wide x 9'-0" high
 Travel Distance : 75'-0"

Escalators at Main Entrance [L2] to Expansion

Number of Escalators : 3
 Incline / Step Width : 30 degrees / 40"
 Vertical Rise : 3 escalators at 14'-0"
 Floors Served : 3 escalators – L2 and L3
 Number of Intermediate Supports : None
 Flat Steps : 2 at each end

Internal Escalators

Number of Escalators : 6
 Incline / Step Width : 30 degrees / 40"
 Vertical Rise : 3 escalators at 53'-0" each
 3 escalators at 22'-0" each
 Floors Served : 3 escalators – L3 and L4
 3 escalators – L4 and L5
 Number of Intermediate Supports : None
 Flat Steps : 2 at each end

2.7.7 Description of Elevator Equipment

Hoisting Machines: Traction hoisting machines will be provided for all elevators.

Motor Drive: All traction elevators will have energy efficient regenerative type variable voltage variable frequency motor controls.

Elevator Controls: Microprocessor-based generic elevator controls system will be used on all elevators. The elevators will have firefighter controls and independent service feature. The service elevators will also have attendant operation.

Elevator Management and Information System (EMIS): All elevators will be monitored and controlled from a central location via manufacturer's standard elevator management system.

Intercommunication System: An intercom system will be used to provide communication among all car stations, machine rooms and the EMIS master station.

Signaling and Operating Devices:

- Main and auxiliary (passenger elevators only) car stations
- LED hall lanterns for passenger elevators and LED car riding lanterns for the freight and service elevators
- Call buttons with LED call registered lights
- Emergency Cab Lighting
- Tamperproof fixtures for the service and freight elevators

Entrances: The passenger elevators at the main entrance will have glass door panels with stainless steel unit frames. The rest of the elevators will have hollow metal with bolted type frames.

Door Operation: Heavy duty door operator with closed-loop, variable voltage variable frequency controls. The door system will be fitted with the light curtain type door protective device.

Emergency Power Operation: The elevators will be automatically lowered to the main entrance level in a sequence determined by the Owner. One elevator from each passenger elevator group will remain operating on emergency power until normal power is restored.

Cab Enclosures: The passenger elevators will be fitted with custom-designed wall panels, ceilings, lighting fixtures, handrails and flooring. The service elevators will have stainless steel walls and ceiling, standard florescent lighting fixtures, aluminum checkered plate flooring and dual handrails on the sidewalls. The freight elevator enclosures will be the manufacturer's standard freight cab enclosure.

2.7.8 Description of Escalator Equipment

Type: Cleat step reversible, designed to operate under full load in both directions at contract speed.

Truss: Structural steel truss constructed to carry full capacity load and the weight of exterior balustrade and truss covering of not more than 10.0 pounds/square foot. Provide galvanized, full width and length oil tight drip pan.

Truss Extension: Provide where support-to-support distance is excessive for standard units. Extend floor plates to cover extension.

Tracks: Factory aligned, completely independent system with smooth track surface. Provide solid transition sections.

Step Drive Assembly: Mount top sprocket assembly rigidly to truss with brackets. Provide accurately machined sprockets. Tension carriage at bottom end will be adjustable to maintain proper tension on step chains.

Steps: Single piece, cleat type, cast aluminum with sound deadening material. Provide step wheels with sealed roller bearings.

Step Brushes: The escalators will be fitted with manufacturer's standard step brushes.

Combplates: Sectionalized, cast aluminum units arranged to correspond to step treads.

Landing Plates: Constructed of aluminum with anti-slip grid pattern.

Balustrades: Tempered safety glass having low deckboard with aligned vertical joints.

Drive Unit: Worm gear or helical gear type with three phase AC motor having soft start feature. Provide duplex chain transmission from drive unit to drive sprocket.

Handrails: Vulcanized rubber multi-ply cove with steel core reinforcement, factory splices. Provide traction type handrail drive.

Controller: Microprocessor-based controller with full magnetic, continuous duty, reversible type, overload and phase failure protection. Integral disconnect switch or circuit breaker. Manufacturer's standard energy

saving system. Provide a port or infrared transmitter at the top end newel for connection of service tool without opening floor plate.

Escalator Management and Information System:

The EMIS will incorporate necessary controls and means to monitor the operation of the escalators.

Safety Devices:

- Broken step – chain devices.
- Stop switches at both ends of escalator.
- Emergency stop buttons at top and bottom landings on right side of escalators.
- Speed monitor and anti-reversal.
- Skirt switches.
- Combplate switches.
- Missing step and step level devices.
- Step upthrust switch.
- Demarcation lights.
- Anti-slide knobs.
- Intersection guards.
- Stopped handrail device.
- Handrail entry switch at newel base.
- Caution signs.

2.8 Expansion Simulation Report
(Prepared by Epstein Strategic Consulting)

2.8.1 Introduction

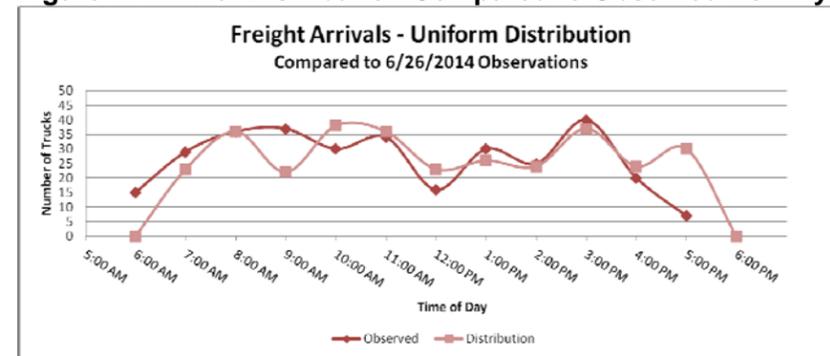
A simulation study was performed to evaluate Javits Center freight traffic in order to inform and validate design of the proposed trailer storage and marshalling expansion. Input data for the study was gathered from historical freight data provided by Javits Center as well as observed activity reported by Sam Schwartz Engineering.

2.8.2 Procedure

The initial simulation model was constructed to reflect the current Javits Center freight configuration, consisting of 23 Level 01 dock positions and 20 Level 03 dock positions. Dock positions which would be removed with the construction of the trailer storage expansion were not considered.

To prepare the simulation for a run, an event arrival schedule is input, which dictates arrival windows for all traffic that would require use of the loading docks – decorator trailers, advanced freight, and direct exhibitor freight. A uniform distribution is used to model the arrival time of each individual trailer, meaning that if for example 200 trailers are scheduled to arrive between 6 AM and 6 PM, each of the 200 will be assigned an arrival time within the window with all times being equally likely. The chart below compares a random sampling of values from the uniform distribution used with the observed Javits freight arrival activity at the 39th street entrance on June 26th. The random sampling provides a similar profile to the observed activity and was therefore deemed appropriate for use in the simulation.

Figure 1: Arrival Distribution Compared to Observed Activity

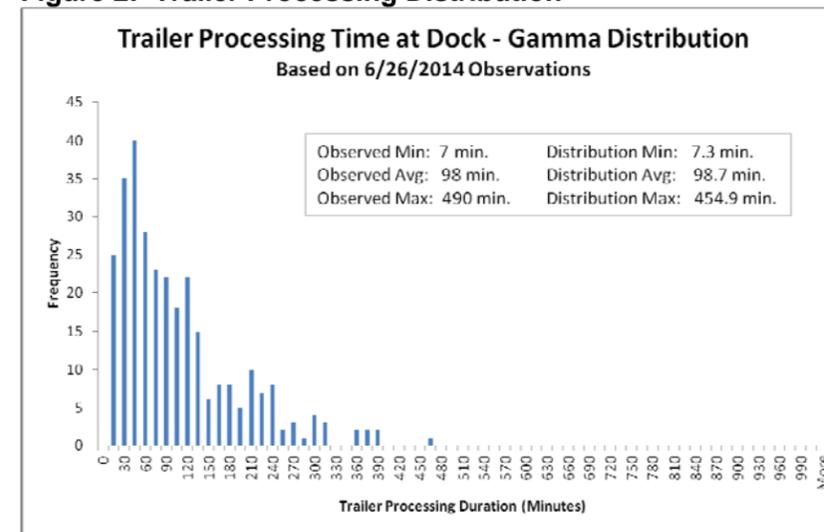


Once a trailer arrives at the facility two potential routings are possible. If a dock is available the trailer will be assigned to this dock and proceed directly to be unloaded. If all docks are occupied the trailer is instead sent to marshalling, a new area

included in the proposed expansion design. Marshalling lanes provide incoming trailers with an on-site waiting area to stage prior to receiving a dock assignment. While not currently considered in the simulation, this area could function beyond a simple first-come-first-serve setup and instead allow Javits to strategically choose and order arrivals to streamline event setup. If routed to marshalling in the simulation, the trailer will wait until a dock becomes available and will then proceed to it in order to unload.

Another value which is important to accurately capture to properly model the system is trailer time spent at the dock. Trucks deliver trailers to the assigned dock position for unloading. A gamma distribution is then sampled to determine how long the trailer will remain at the dock position to be unloaded. The chart below reflects a random sampling from the distribution used to determine dock unload duration. The distribution shown below was determined using Javits dock activity observations taken on June 26th. In order to achieve the observed average of 98 minutes with a maximum of over 8 hours, an asymmetrical distribution is required.

Figure 2: Trailer Processing Distribution



Processing times between 30 and 60 minutes are most likely, with greater values' probability decreasing as duration increases. Using the current distribution, 95% of trailers are processed within 293 minutes (4 hours and 53 minutes) the remaining 5% of trailers require additional time ranging from 1 minute to multiple hours.

After unloading the trailer will proceed either to the new trailer storage facility if it is designated as decorator, or out the existing 34th street exit if not. This simulation was focused primarily on the activity surrounding use of the trailer marshalling and storage facility and therefore does not consider trailers leaving the facility

beyond this point (the 34th street exits). Decorator trailers are transported to the trailer storage building and parked for the duration of the event.

Once the given event has concluded, trailers are processed in the reverse order than during event setup with direct exhibitor freight pickup arriving first through the 12th avenue entrance. Advanced freight is also able to load at this time, so trailers are retrieved from trailer storage and routed to available docks as well. Once exhibitor freight has diminished, decorator trailers from storage are retrieved and re-loaded. Currently in the simulation all trailers depart the event center (via the 34th street exits) once their respective loading/pickup is complete.

Based on the above description, it is important to keep in mind some of the assumptions being made for the simulation:

- At the time that the simulation study was conducted, the expansion design assumptions included adding 18 new level 3 loading docks. Potential dock positions added to level 1 were treated as storage in the study and would further improve unloading capacity if converted to viable dock positions.
- A total marshalling capacity of 51 trailers was assumed for the proposed expansion. Total storage available in the expansion was assumed to be 174 vehicles during move-in/move-out activity and 230 vehicles when no activity is occurring. Total facility storage capacity when not active therefore would increase to 272 vehicles.
- Any trailer is considered compatible with any available dock; single level events or detailed dock assignments are not considered.
- No limitations have been imposed related to number of drivers available – drivers are always available to pick up trailers that require transport to or from the docks.

2.8.3 Results

Using the simulation procedure outlined above, tests were conducted to determine requirements of the new marshalling and storage facility. In order to accurately capture a high-traffic event, the observations taken from the Fancy Food convention lasting from 6/24/2014 to 7/2/2014 were used to construct a scenario reflecting a large event utilizing the entirety of the convention center floor. The scenario tested was comprised of the following arrival schedule (with expo time shortened for convenience):

Table 1: Fancy Food Replica Event Arrival Schedule

	Arrival Window	# of Vehicles	% Decorator Vehicles
Day 1 – Move In	6 AM – 7 PM	116	100%
Day 2 – Move In	6 AM – 7 PM	319	18%
Day 3 – Move In	6 AM – 7 PM	246	0%
Day 4 – EXPO	-	-	-
Day 5 – Move Out	6 AM – 7 PM	198	0%
Day 6 – Move Out	6 AM – 7 PM	174	100%

During move-in decorator arrivals take place prior to exhibitor freight and POV deliveries. The reverse is true as the event is packed up, with decorator freight loading occurring entirely on the final day of move out.

Site Performance Comparison

The replica event was run in a model simulating the existing site and a model of the proposed new configuration. The following graphics depict the observed dock utilization for the existing and proposed sites respectively:

Figure 3: Replica Event Dock Activity – Existing Site

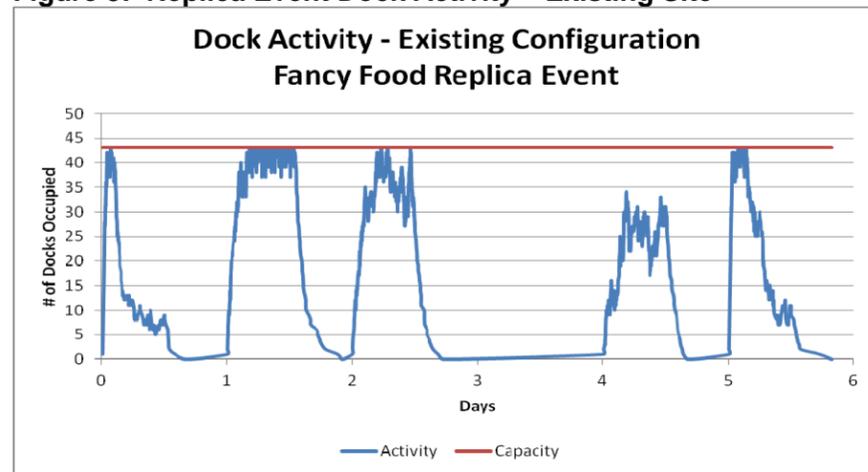
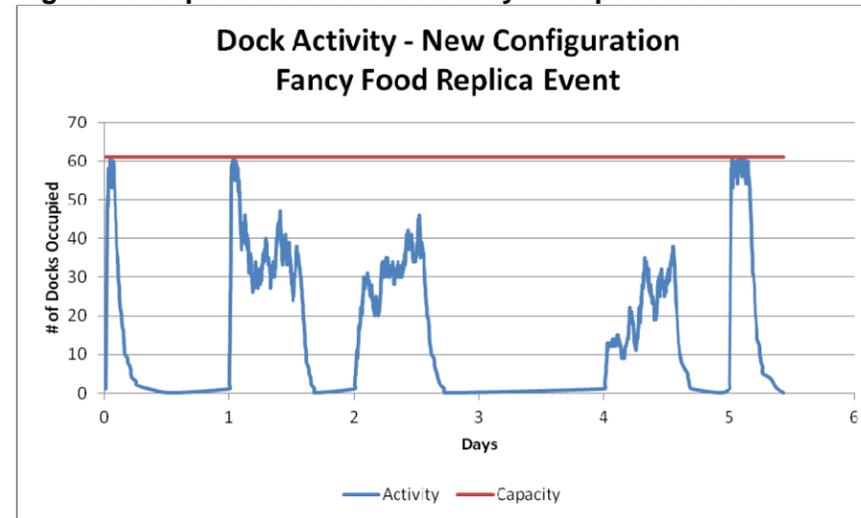


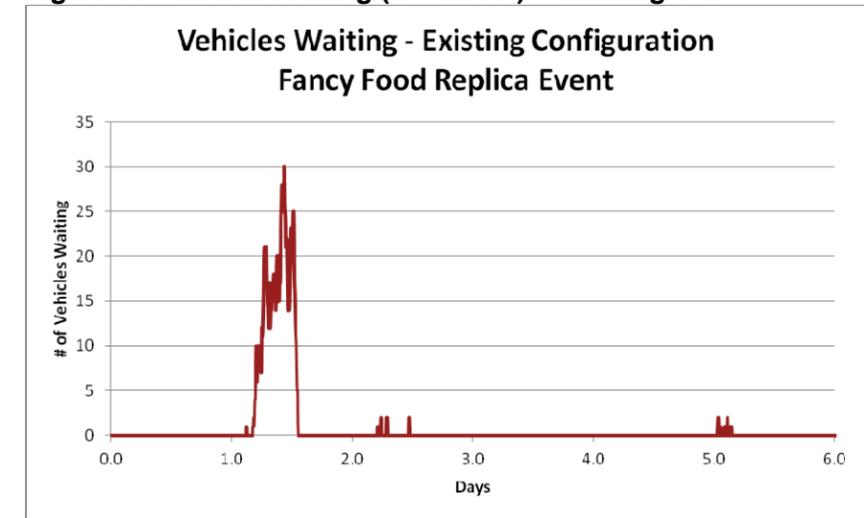
Figure 4: Replica Event Dock Activity – Proposed Site



The first and last days of the event behave similarly in both scenarios due to 100% of vehicles being decorator freight on these days, which for the most part are nearby and accessible. The activity profile of these days are therefore very busy at the start of the day as a result of fresh vehicles quickly being brought in to replace loaded/unloaded vehicles leaving a dock. Using the proposed on-site storage improves accessibility and quantity of decorator vehicles easily accessible, however the more significant improvement is the ability to use more docks and complete decorator load and unload activities more quickly.

Day 2 of the event (shown on the graphs spanning from '1' and '2' on the X axis) is the busiest day of the event in terms of freight arrivals, primarily exhibitor in origin. 90% or more of docks are in use for 9.4 hours of the day, resulting in significant accumulation on the surrounding city streets as shown below.

Figure 5: Vehicles Waiting (On-Street) – Existing Site



As many as 30 vehicles are shown having arrived at the site waiting for clearance to approach a dock position. These vehicles are forced to park nearby on-street to be accessible when a dock does become available.

The proposed site processes the 319 vehicle volume promptly, able to receive vehicles at available docks upon arrival throughout the day. The small portion of remaining decorator trailers are again accessible and therefore are unloaded immediately, resulting in a spike in dock usage at the outset of the day. The remaining load and unload days (3 and 5 respectively) consist of lower arrival volumes and are processed smoothly in both scenarios.

Proposed Site – Compressed Schedule

Given the significant available dock capacity shown throughout the move-in and move-out activities when testing the proposed expansion, a test was conducted to determine the shortest arrival window which could effectively process the desired vehicle volumes. By shortening the arrival window used, docks are utilized more efficiently for a shorter duration thereby creating opportunities to possibly consolidate the total number of days required.

Figure 6: Replica Event Dock Activity – Compressed Arrivals

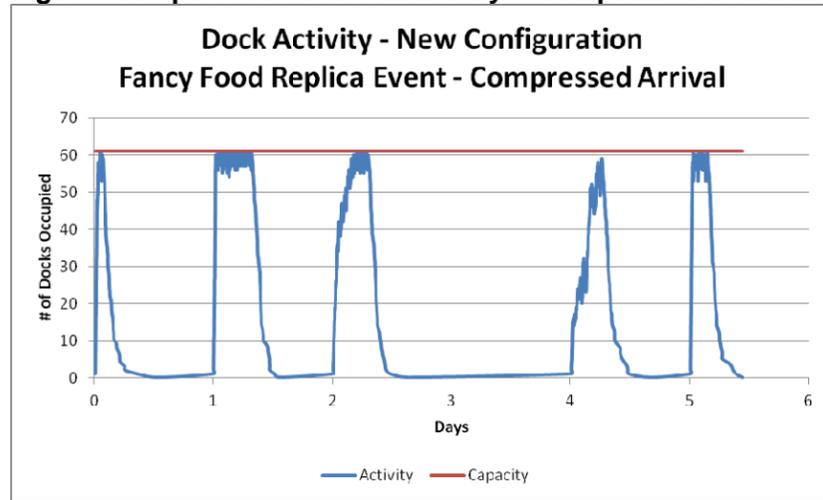
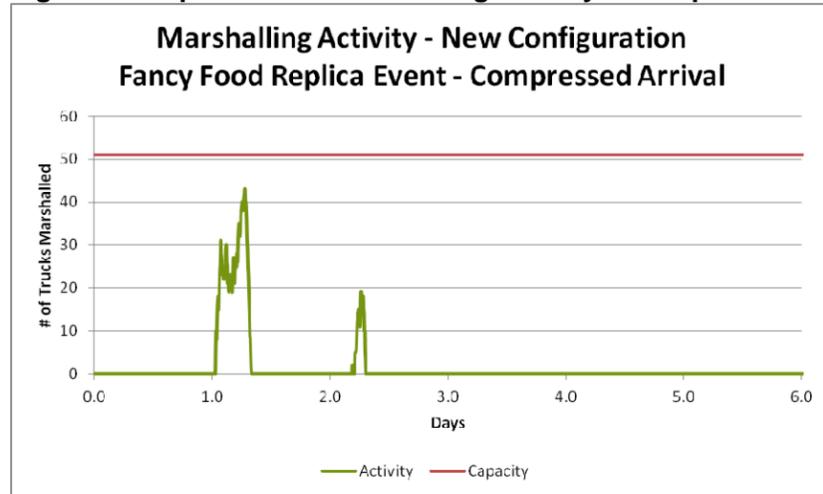


Figure 7: Replica Event Marshalling Activity – Comp. Arrival



By shortening the arrival window of vehicles from 13 hours to 7 hours, the Fancy Food replica event is able to more efficiently perform load/unload activities without marshalling reaching capacity and thereby resulting in vehicles waiting on city streets as they do currently. For the replica event tested, overall reduction in total unload time by day reached as high as 27% compared to using the 13 hour arrival window. To summarize; the proposed new configuration performs best when vehicles are marshaled and ready to proceed to a dock quickly. This can be accomplished by shortening the window in which vehicles arrive (or advancing it such that many vehicles are present when loading/unloading begins) or by increasing the number of vehicles scheduled for a given window.

Proposed Site – Single Day Stress Test

To better understand at what peak volumes the proposed structure is able to function at, a stress test was performed by feeding a large volume of exhibitor freight through the system and observing the reaction. An arrival volume of 500 vehicles was used, which exceeds the 95th percentile of inbound exhibitor vehicles for 2013 events. The test was conducted over a single 24 hour period.

Figure 8: Single Day Stress Test – Dock Activity

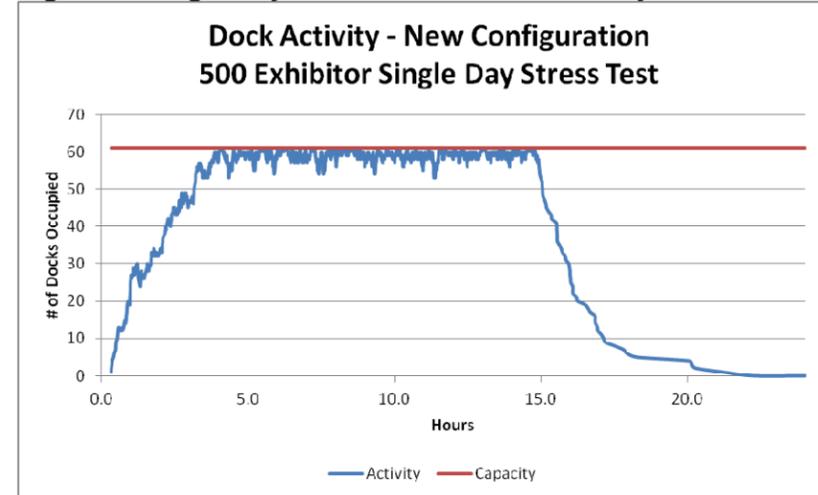
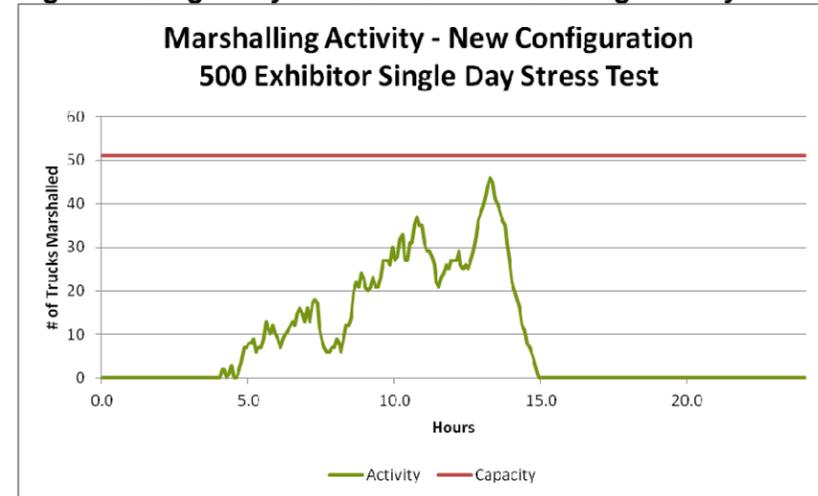


Figure 9: Single Day Stress Test – Marshalling Activity



The proposed design is successfully able to process 500 exhibitor trailers within the 24 hour period without exceeding marshalling capacity. This result demonstrates the value of incorporated marshalling on-site; while currently it is difficult to handle moderate vehicle volume without vehicles overflowing onto city streets, by

adding adequately sized marshalling the capacity of the facility as a whole can be increased drastically.

Proposed Site-Storage Observations

While not derived from the simulation, historical event data was examined to evaluate whether the proposed storage expansion would be capable of storing the number of decorator vehicles needed.

When evaluated on an individual event basis, the largest number of decorator vehicles were used for the Fancy Food event in July 2013, with 174 decorator vehicles. The proposed expansion is capable of housing this volume while active and has considerable additional capacity when not active – 32% increased capacity. Alternatively the storage can be evaluated for storing equipment for multiple events – a summary of the 2013 decorator freight volume by month is included below.

Table 2: Total 2013 Decorator Freight by Month

	Total Decorator Vehicles	Capacity	% Accommodated
January	314	230	73%
February	364	230	63%
March	255	230	90%
April	259	230	89%
May	260	230	88%
June	216	230	106%
July	357	230	64%
August	229	230	100%
September	136	230	169%
October	298	230	77%
November	207	230	111%
December	134	230	172%

Eight months of the year, the planned storage is sufficient to hold 85% or more of the total decorator vehicles to be used during that month simultaneously assuming no overlap. For the remaining four months, storage is capable of handling a majority of the month's trailers, and is capable of handling all single event volumes across all 12 months.

2.8.4 Conclusions & Recommendations

Based on the results included above, the proposed expansion design provides significant benefit compared to the existing trailer storage and marshalling options. To summarize the benefits outlined above:

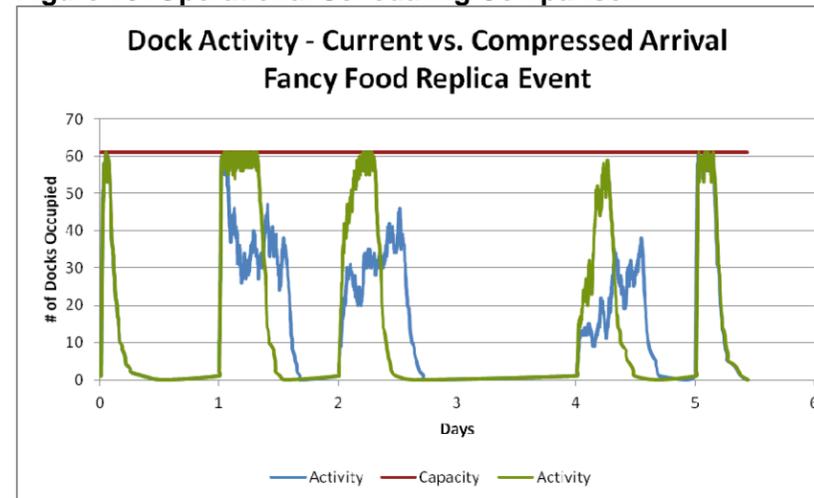
- The existing site offers no marshalling space, resulting in the surrounding city streets being used by vehicles awaiting entry (as many as 30 waiting simultaneously based on simulation observations). The proposed design incorporates staging space for 50 or more vehicles (depending on size) which is able to satisfy 100% of marshalling requirements given the arrival rates and unload times tested.
- An additional 18 docks are incorporated into Level 3 of the proposed expansion design and were incorporated into the simulation for testing. Examining activity on Day 2 of the Fancy Food Replica Event which consists of 319 vehicle arrivals, the existing configuration required 9.4 hours at 90% or greater dock utilization to process the volume over a 13 hour window. This same volume resulted in less than 1 hour at greater than 90% utilization when tested with the proposed configuration, generating opportunities to increase daily move-in/move-out volumes (more than 500 vehicles per day possible) or compressing arrival windows to shorten overall move-in/move-out hours for the event (25-30% overall time reduction possible).
- Decorators currently utilize a neighboring lot for trailer storage in addition to multiple off-site locations for large events or multiple shows during which the neighboring lot does not provide sufficient storage space. The proposed design provides storage for 230 trailers and is sufficient to accommodate all shows individually (based on 2013 decorator data) and often multiple shows simultaneously. The Fancy Food event conducted in July 2013 includes the largest decorator vehicle volume of the year with 174 trailers – leaving an additional 33% of storage available for other uses given the new proposed capacity. For 8 out of 12 months of the year, the proposed storage is capable of storing 85% or more of the total decorator freight for the given month combined.

Given these findings, the study indicates that the proposed expansion would provide substantial and quantifiable improvement to Javits Center freight operations.

If pursued, the expansion will provide significant additional capacity for unloading operations. While currently there is negative impact on having trailers nearby for timely dock transfers

(occupying city streets), the opposite will be true once the proposed marshalling space is available on-site. With the combination of additional capacity in both unloading and staging, maintaining the move-in and move-out schedules currently used would prove inefficient and waste capacity. Incoming trailer coordination should be reevaluated to suit the new structure with the objective of consolidating the total number of move-in and move-out days for events; thereby utilizing both dock capacity and load/unload labor more efficiently. The comparison below summarizes visually desirable operations vs. suboptimal operations.

Figure 10: Operational Scheduling Comparison



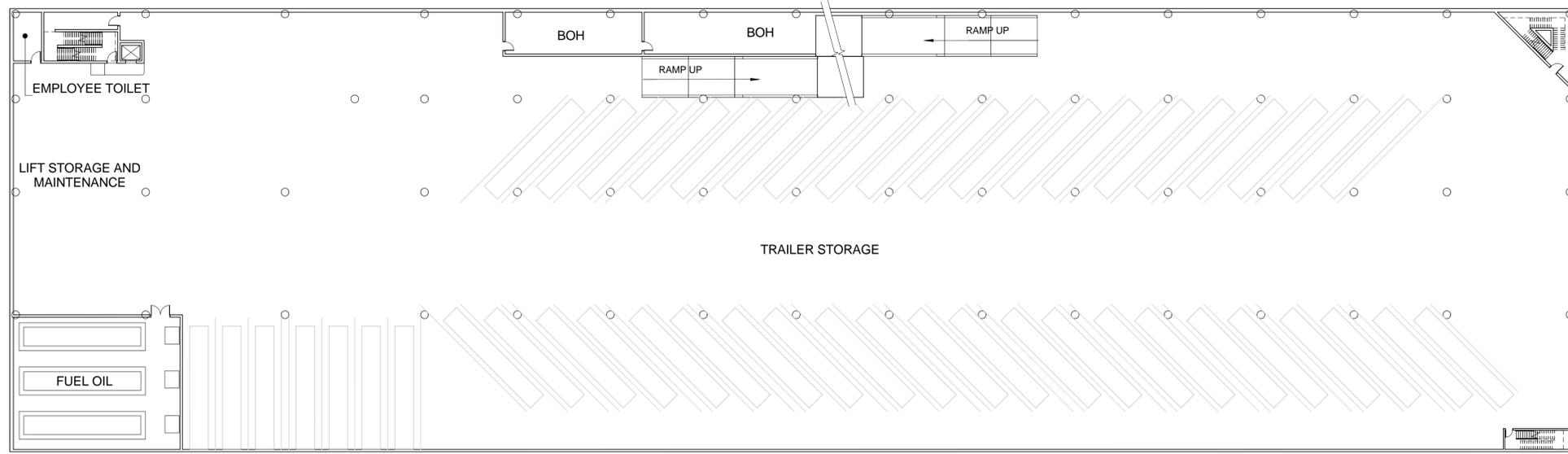
The green line indicates an efficient schedule: activity begins and ends sharply, meaning labor can be scheduled to handle the maximum volume for a precise time period. The blue line reflects current operations being applied to the proposed new configuration; labor is present for a greater amount of time and must be staffed to handle peak volumes, however uniform arrivals often result in significantly less than peak volume being present.

In addition to the proposed expansion improving traffic flow and vehicle presence in the city areas, implementing the above practices is able to provide a return on investment in the form of labor savings as well as potentially allowing the center to host additional events per year if a substantial number of moving days can be consolidated out.

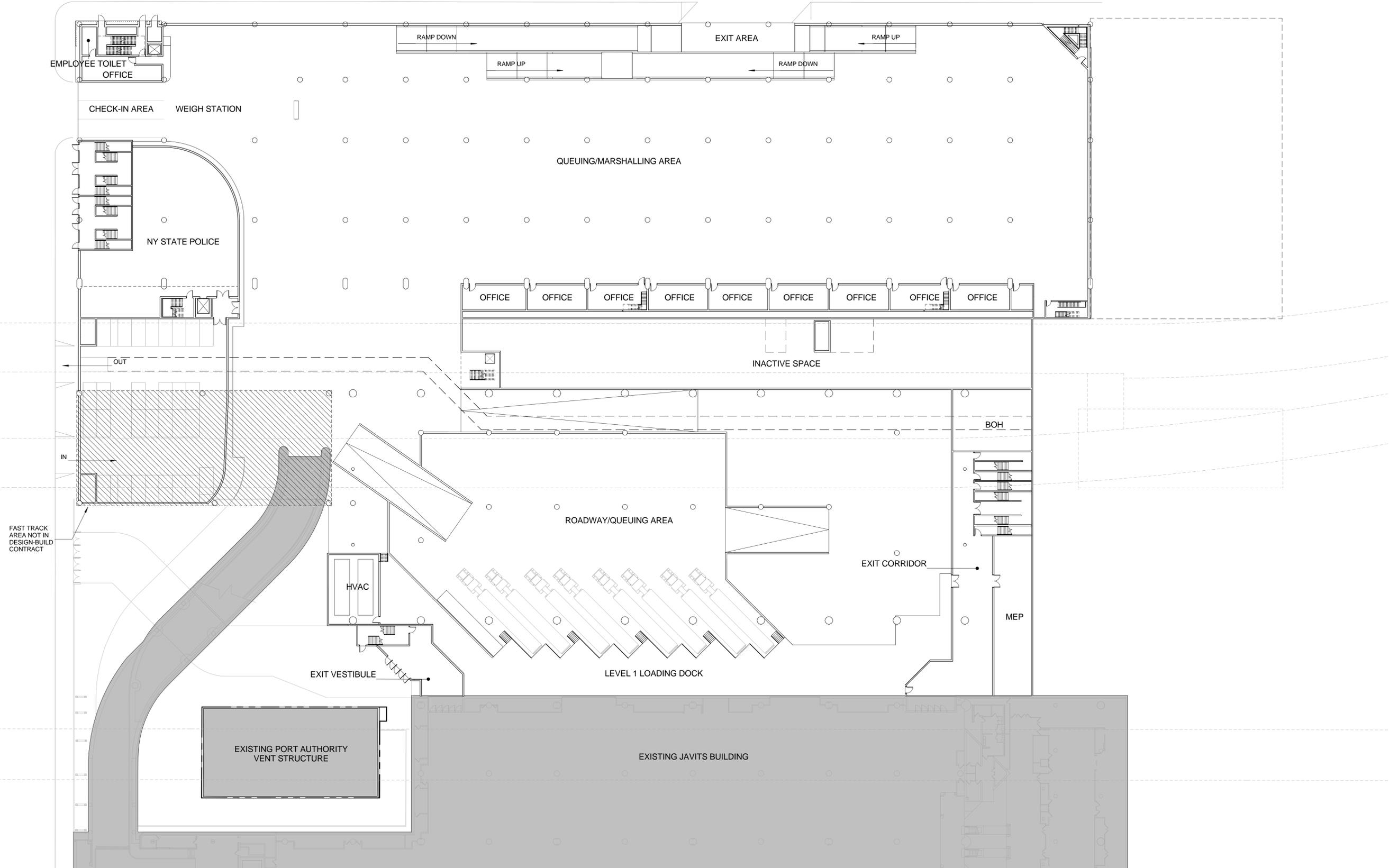
APPENDIX

Architectural Drawings

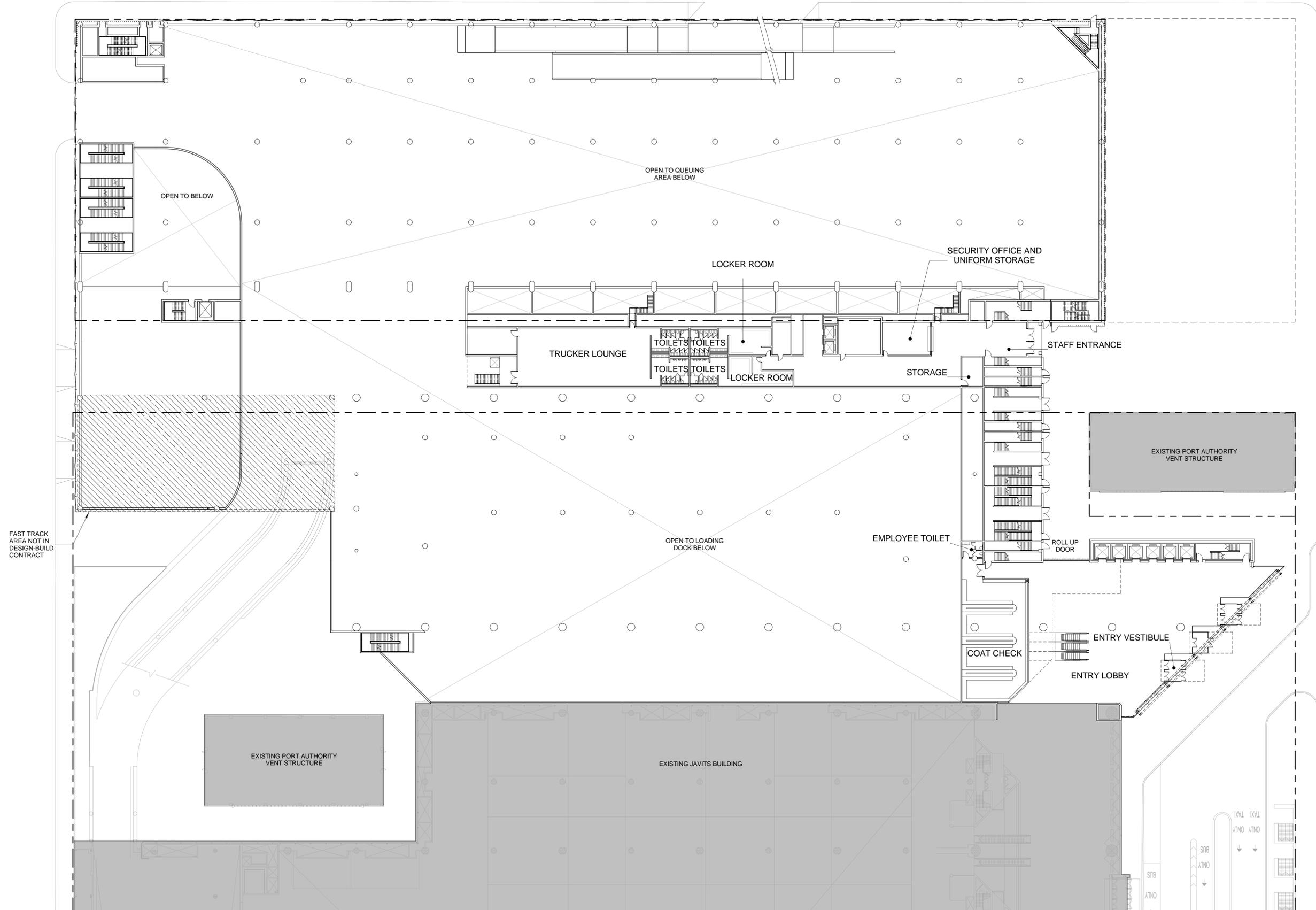
- Plans
- Sections



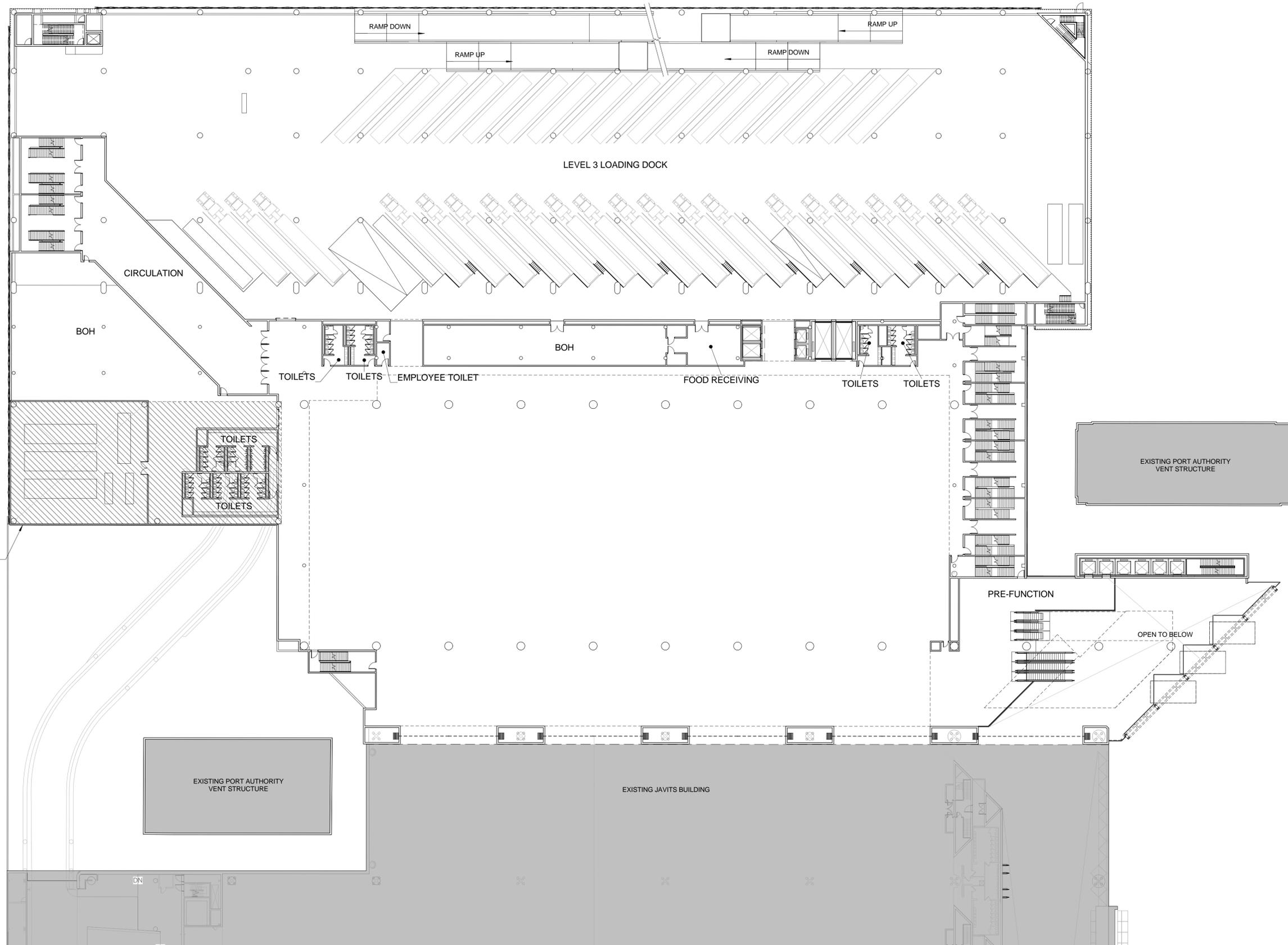
**TRUCK MARSHALLING & EXPANSION
 LEVEL 0 EL -12'-0" - TRAILER STORAGE**



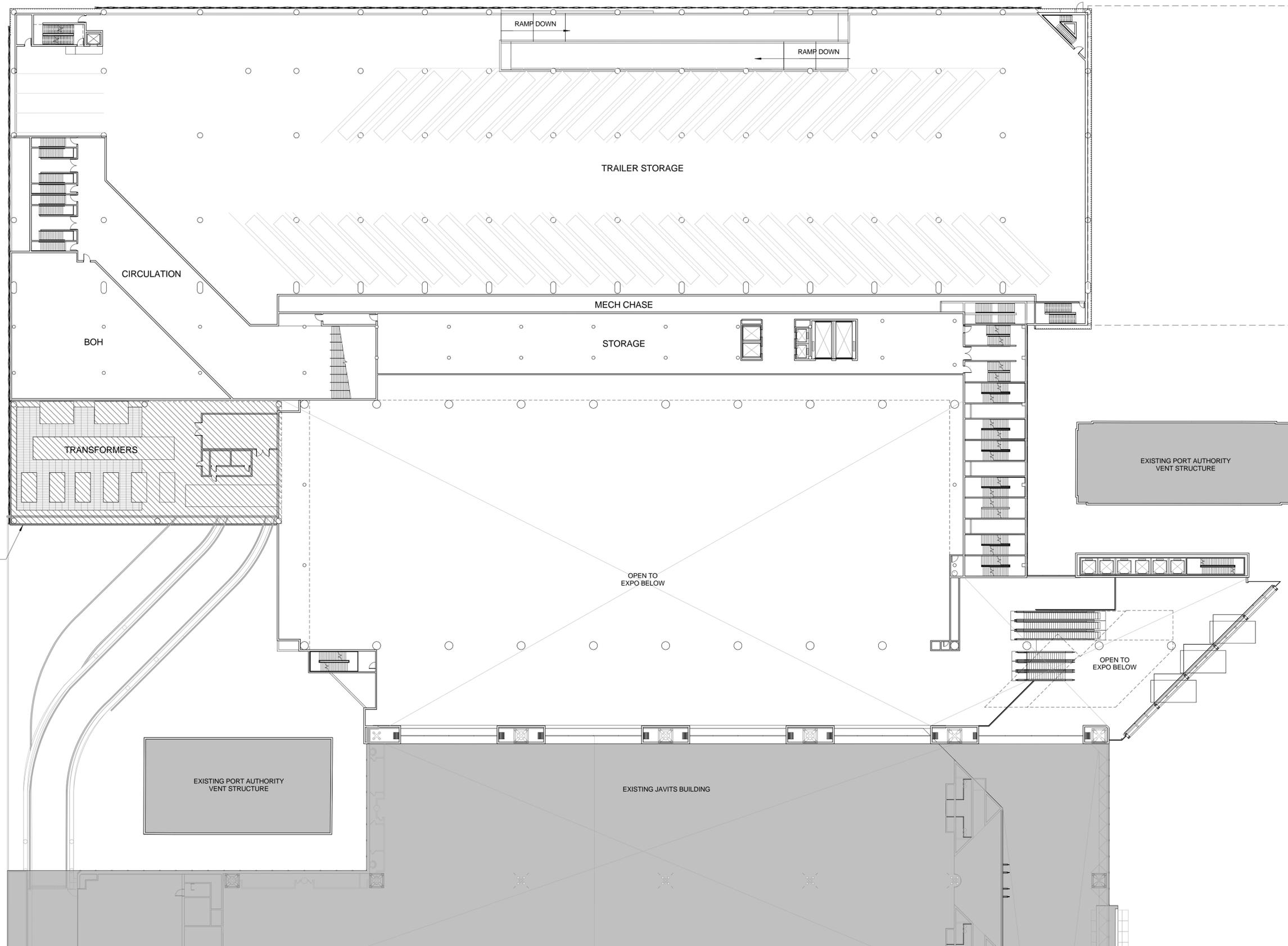
TRUCK MARSHALLING & EXPANSION
LEVEL 1A EL +8'-0" - MARSHALLING



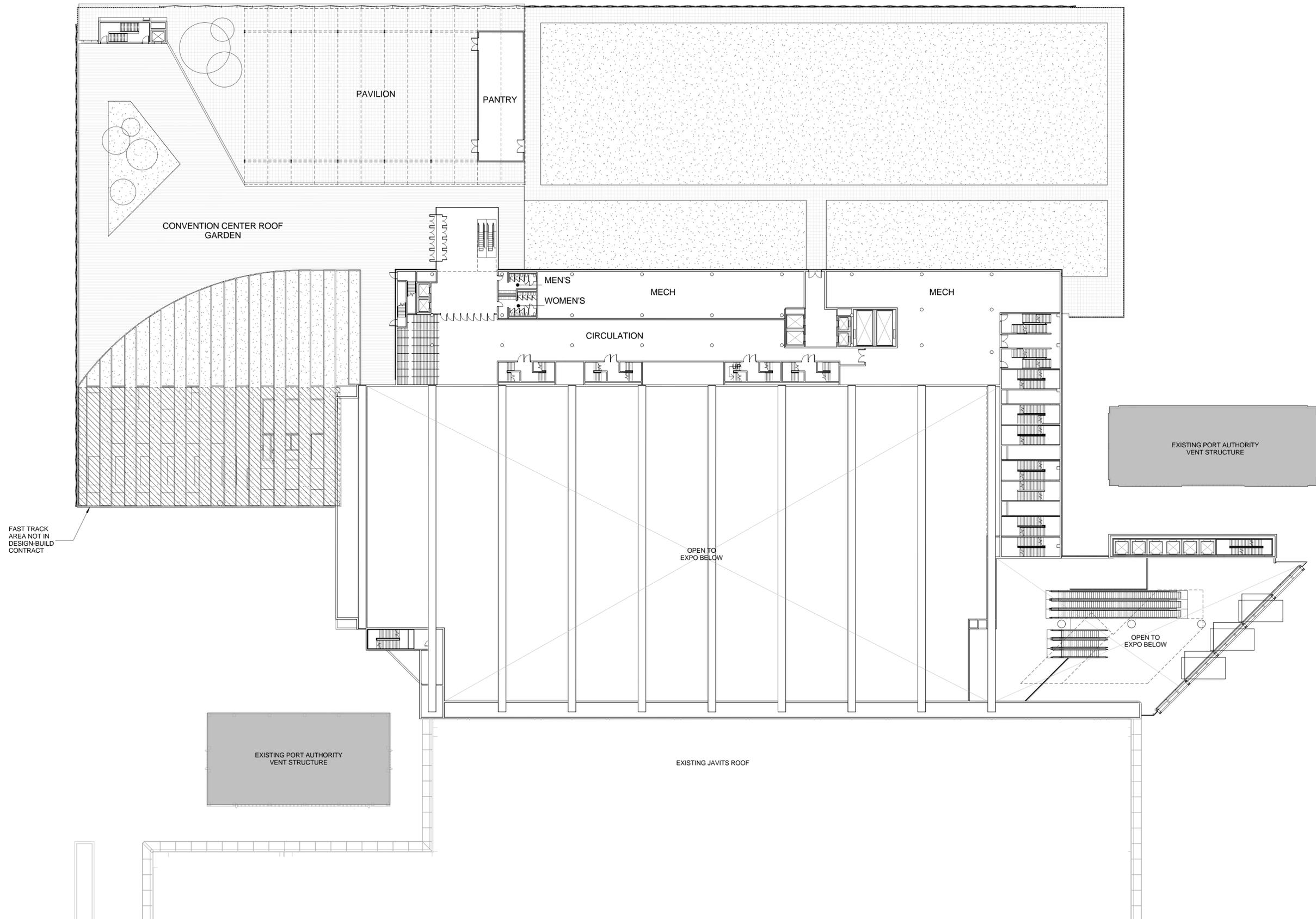
TRUCK MARSHALLING & EXPANSION
LEVEL 2 EL +18'-0" - GRADE LEVEL



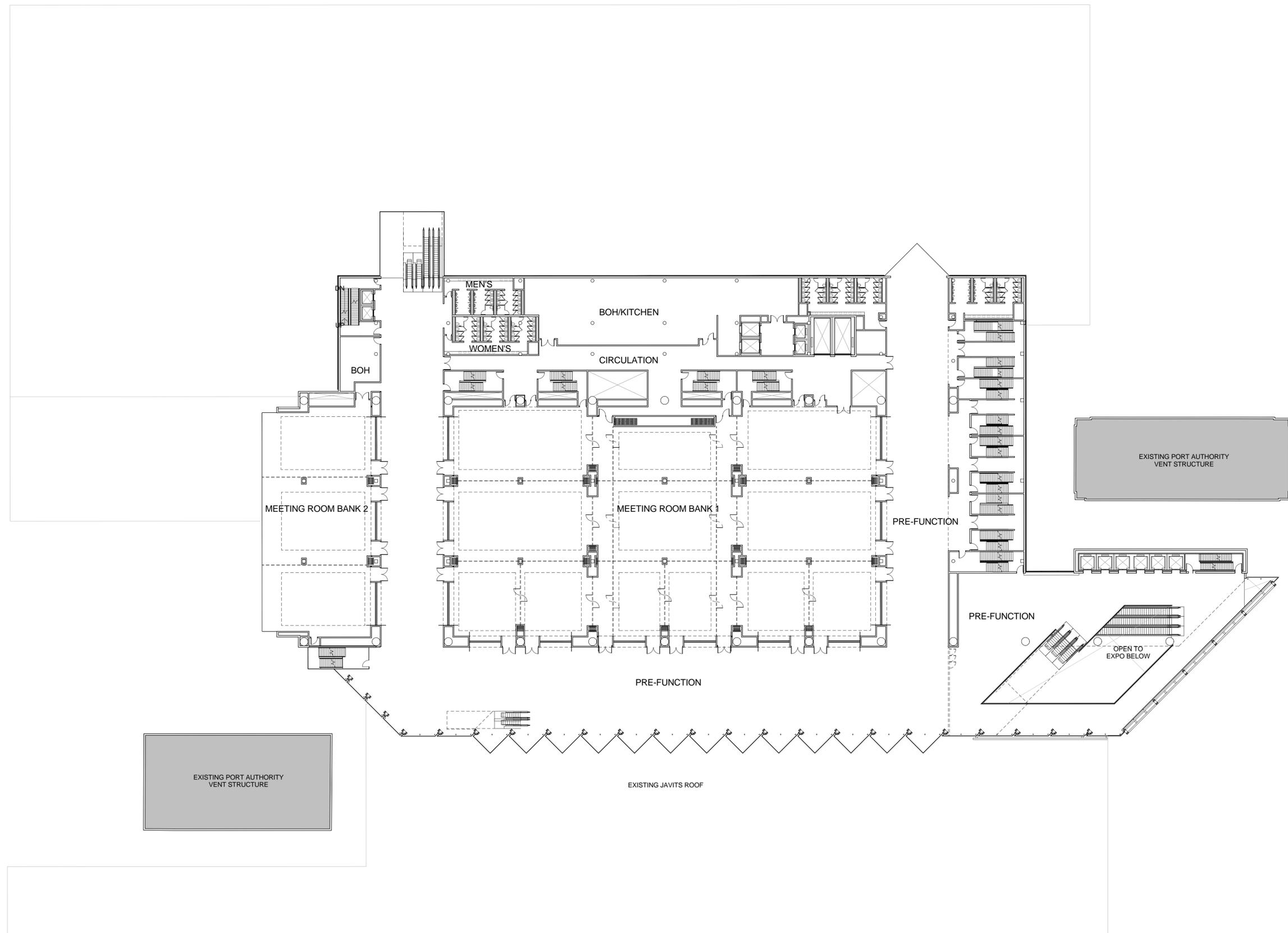
TRUCK MARSHALLING & EXPANSION
LEVEL 3 EL +32'-0" - EXPO/LOADING DOCK



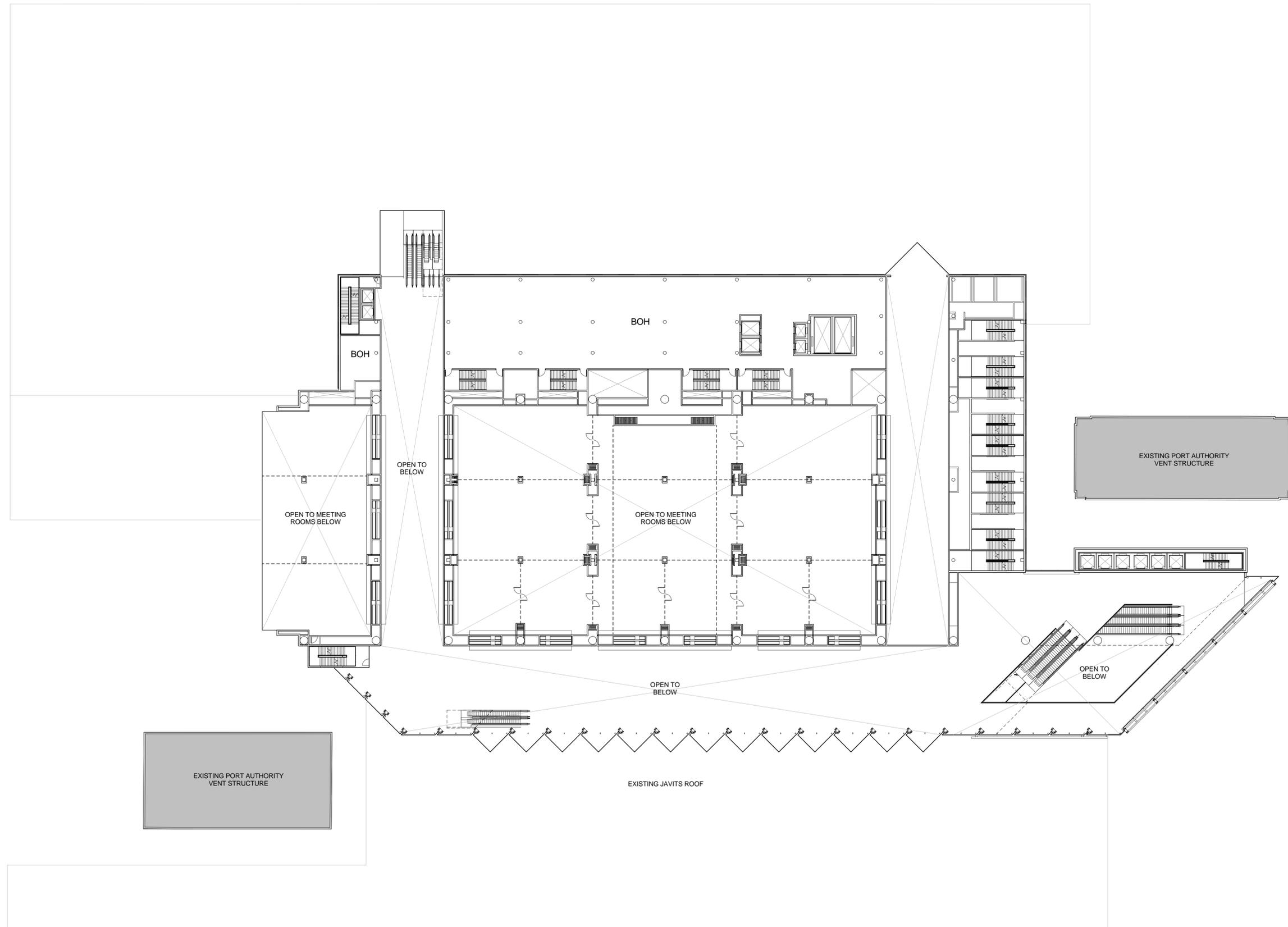
FAST TRACK
AREA NOT IN
DESIGN-BUILD
CONTRACT



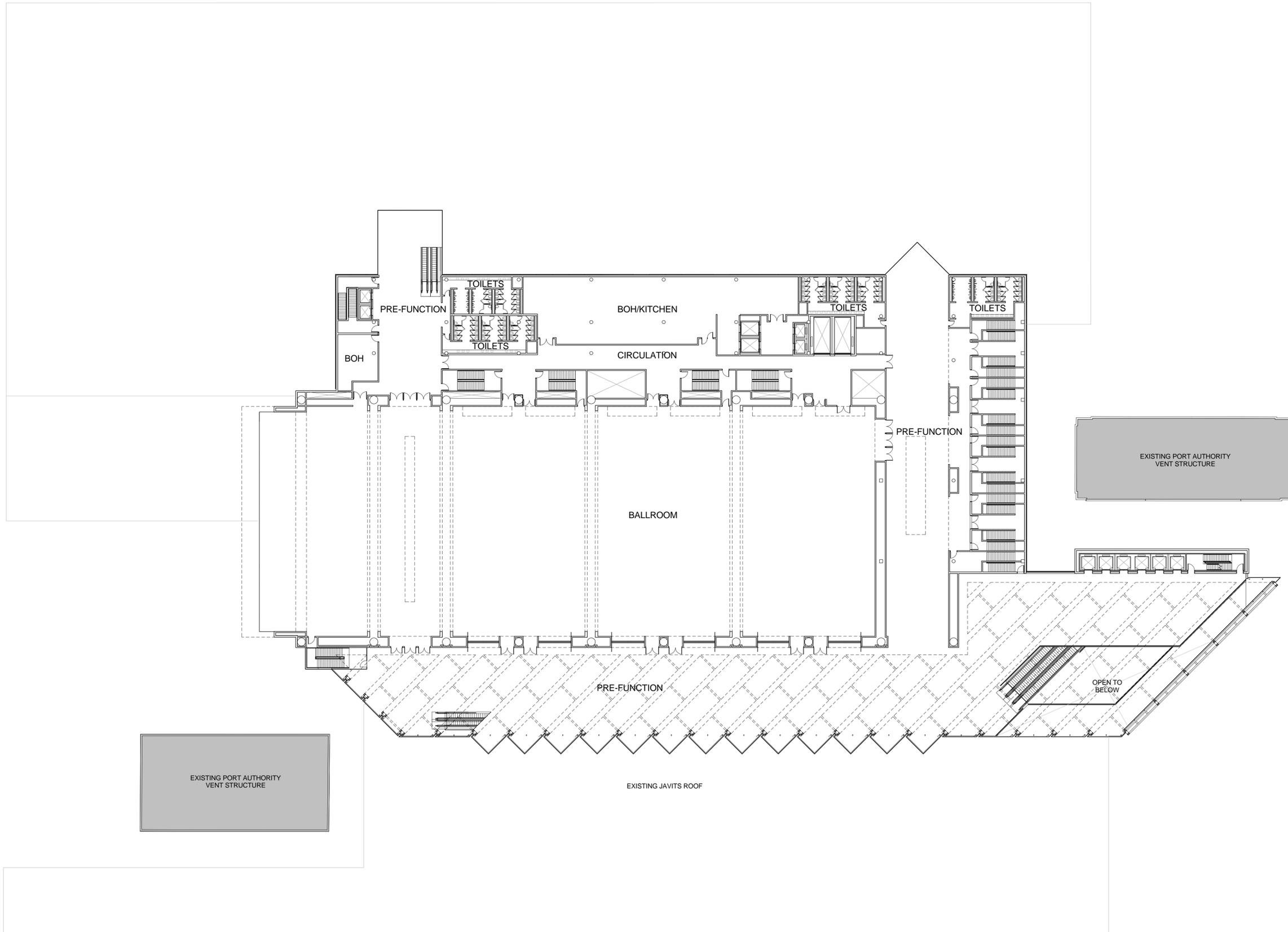
TRUCK MARSHALLING & EXPANSION
LEVEL 3 UPPER MEZZ EL +70-6" - MEZZANINE



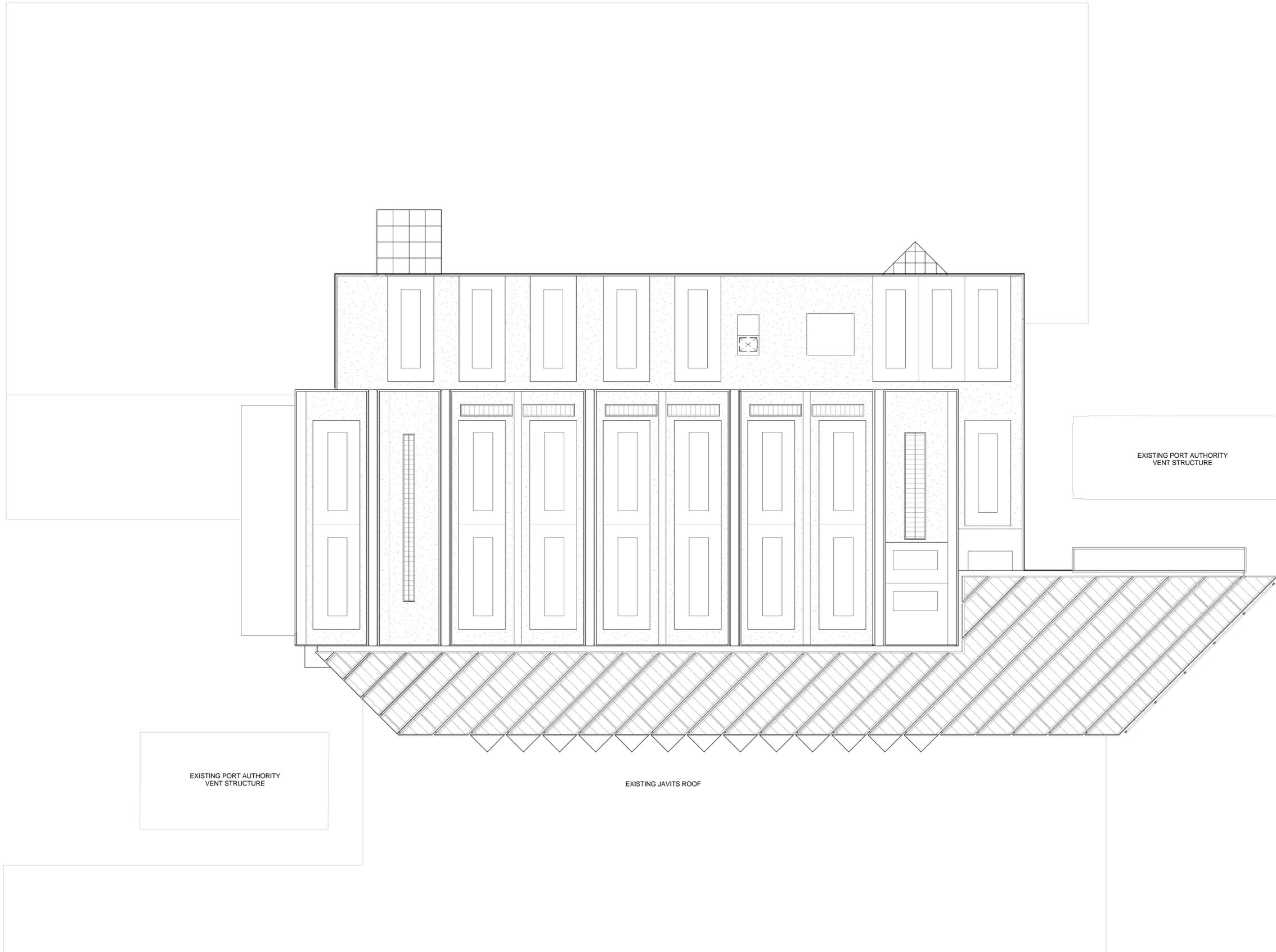
TRUCK MARSHALLING & EXPANSION
LEVEL 4 EL +85'-0" - MEETING ROOMS



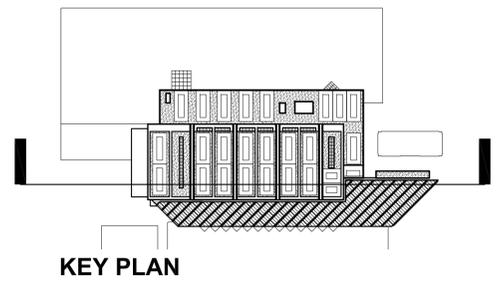
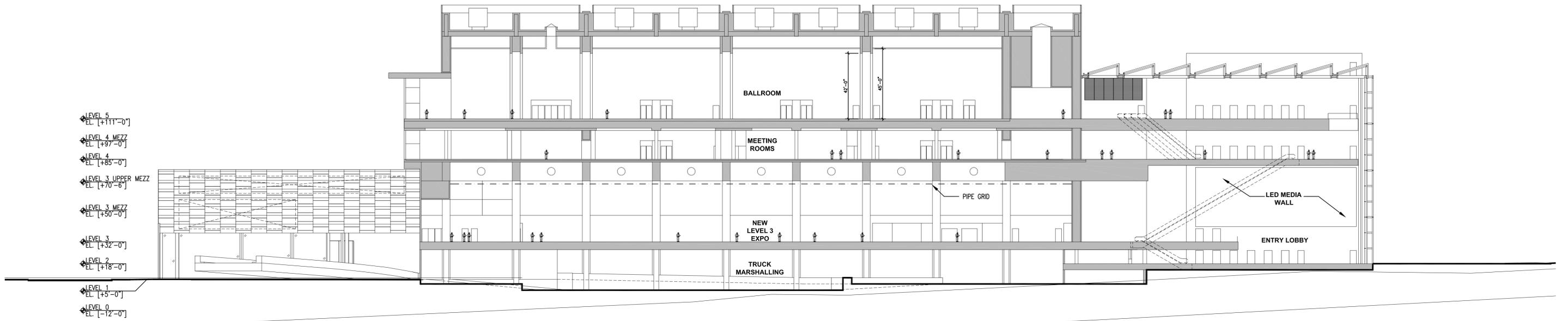
**TRUCK MARSHALLING & EXPANSION
 LEVEL 4 MEZZ EL +97'-0" - MEZZANINE**



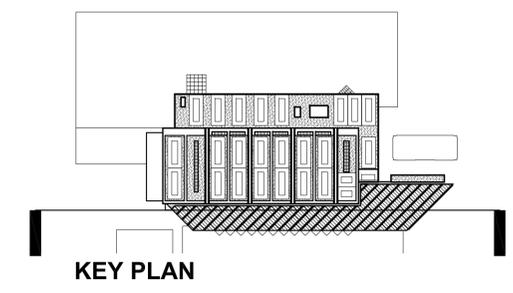
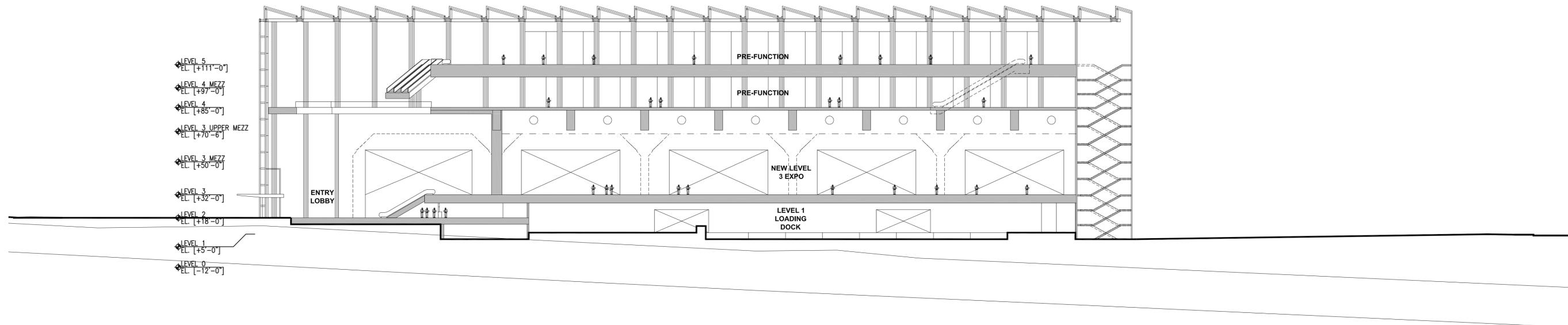
TRUCK MARSHALLING & EXPANSION
LEVEL 5 EL +111'-0" - BALLROOM



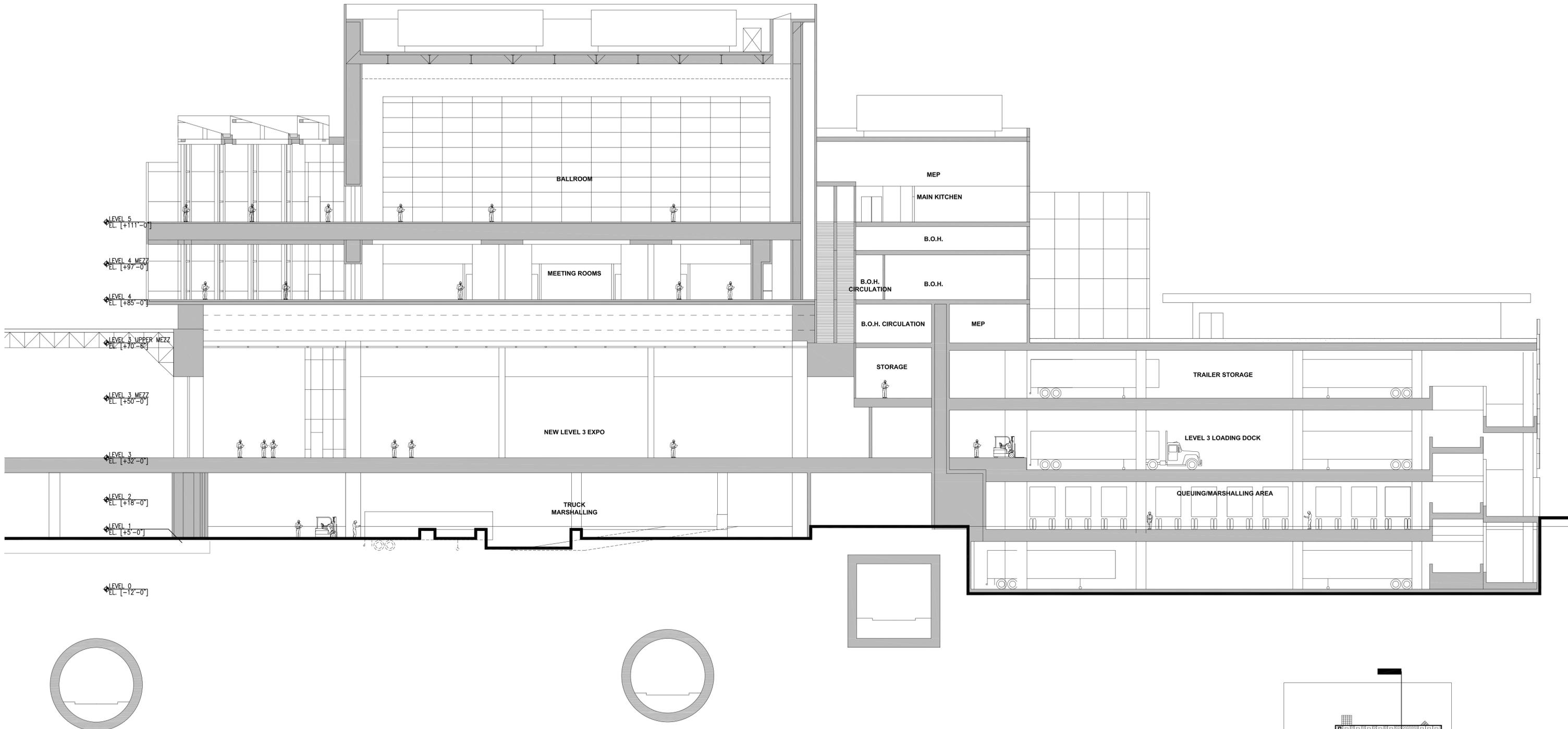
TRUCK MARSHALLING & EXPANSION
ROOF PLAN



**TRUCK MARSHALLING & EXPANSION
 EAST-WEST SECTION THROUGH EXPO**



TRUCK MARSHALLING & EXPANSION
EAST-WEST SECTION THROUGH PREFUNCTION



LEVEL 5
 EL. [+111'-0"]
 LEVEL 4 MEZZ
 EL. [+97'-0"]
 LEVEL 4
 EL. [+85'-0"]
 LEVEL 3 UPPER MEZZ
 EL. [+70'-0"]
 LEVEL 3 MEZZ
 EL. [+50'-0"]
 LEVEL 3
 EL. [+32'-0"]
 LEVEL 2
 EL. [+18'-0"]
 LEVEL 1
 EL. [+5'-0"]
 LEVEL 0
 EL. [-12'-0"]

BALLROOM

MEETING ROOMS

NEW LEVEL 3 EXPO

TRUCK MARSHALLING

MEP

MAIN KITCHEN

B.O.H.

B.O.H. CIRCULATION

B.O.H.

B.O.H. CIRCULATION

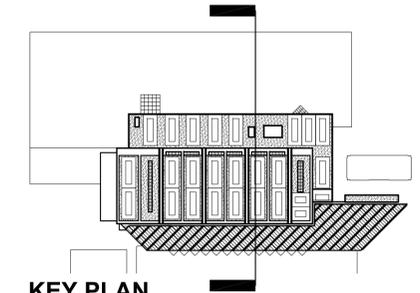
MEP

STORAGE

TRAILER STORAGE

LEVEL 3 LOADING DOCK

QUEUING/MARSHALLING AREA



KEY PLAN

TRUCK MARSHALLING & EXPANSION
NORTH-SOUTH SECTION

ATTACHMENT D
DIVERSITY PRACTICES



ADDENDUM
DIVERSITY PRACTICES QUESTIONNAIRE

I, _____, as _____ (title) of _____ firm or company (hereafter referred to as the company), swear and/or affirm under penalty of perjury that the answers submitted to the following questions are complete and accurate to the best of my knowledge:

1. Does your company have a Chief Diversity Officer or other individual who is tasked with supplier diversity initiatives? Yes or No

If Yes, provide the name, title, description of duties, and evidence of initiatives performed by this individual or individuals.

2. What percentage of your company's gross revenues (from your prior fiscal year) was paid to New York State certified minority and/or women-owned business enterprises as subcontractors, suppliers, joint-venturers, partners or other similar arrangement for the provision of goods or services to your company's clients or customers?

3. What percentage of your company's overhead (i.e. those expenditures that are not directly related to the provision of goods or services to your company's clients or customers) or non-contract-related expenses (from your prior fiscal year) was paid to New York State certified minority- and women-owned business enterprises as suppliers/contractors?¹

¹ Do not include onsite project overhead.



4. Does your company provide technical training² to minority- and women-owned business enterprises? Yes or No

If Yes, provide a description of such training which should include, but not be limited to, the date the program was initiated, the names and the number of minority- and women-owned business enterprises participating in such training, the number of years such training has been offered and the number of hours per year for which such training occurs.

5. Is your company participating in a government approved minority- and women-owned business enterprise mentor-protégé program?

If Yes, identify the governmental mentoring program in which your company participates and provide evidence demonstrating the extent of your company's commitment to the governmental mentoring program.

6. Does your company include specific quantitative goals for the utilization of minority- and women-owned business enterprises in its non-government procurements? Yes or No

² Technical training is the process of teaching employees how to more accurately and thoroughly perform the technical components of their jobs. Training can include technology applications, products, sales and service tactics, and more. Technical skills are job-specific as opposed to soft skills, which are transferable.



If Yes, provide a description of such non-government procurements (including time period, goal, scope and dollar amount) and indicate the percentage of the goals that were attained.

7. Does your company have a formal minority- and women-owned business enterprise supplier diversity program? Yes or No

If Yes, provide documentation of program activities and a copy of policy or program materials.

8. Does your company plan to enter into partnering or subcontracting agreements with New York State certified minority- and women-owned business enterprises if selected as the successful respondent? Yes or No

If Yes, complete the attached Utilization Plan



All information provided in connection with the questionnaire is subject to audit and any fraudulent statements are subject to criminal prosecution and debarment.

Signature of
Owner/Official

Printed Name of
Signatory

Title

Name of Business

Address

City, State, Zip



STATE OF _____

COUNTY OF _____) ss:

On the ____ day of _____, 201_, before me, the undersigned, a Notary Public in and for the State of _____, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to this certification and said person executed this instrument.

Notary Public

New York State Diversity Practices Scoring Matrix

Questions

Q1 - CDO or other person tasked with function					Yes	No	Total
					5 pts	0 pts	
Q2 - Percentage of prior yr. revenues that involved M/WBEs as subs or JVs/partners	20%+	15-19%	10-14%	5-9%	1-4%	0%	
	20 pts	14 pts	10 pts	6 pts	2 pts	0pts	
Q3 - Percentage of overhead expenses paid to M/WBEs	20%+	15-19%	10-14%	5-9%	1-4%	0%	
	16 pts	10 pts	7 pts	4 pts	1 pts	0pts	
Q4 - M/WBE Training			Robust	Moderate	Minimum	None	
			16 pts	8 pts	4 pts	0 pts	
Q5 - M/WBE Mentoring			Robust	Moderate	Minimum	None	
			12 pts	8 pts	4 pts	0 pts	
Q6 - Written M/WBE goals included in the Company's procurements			Robust	Moderate	Minimum	No	
			20 pts	12 pts	6 pts	0 pts	
Q7 - Formal Supplier Diversity Program			Robust	Moderate	Minimum	No	
			6 pts	4 pts	2 pts	0 pts	

New York State Diversity Practices Scoring Matrix

Q8 - Utilization Plan			Robust	Moderate	Minimum	No	
			5 pts	3 pts	1 pts	0 pts	
Total Diversity Score (Max 100 pts)							
Weighted Score							